



# **POPULATION GROWTH IN INDIA**

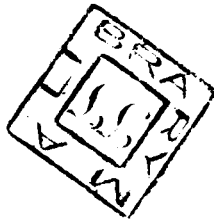
## **AN ANNOTATED BIBLIOGRAPHY**

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DEDICATED

TO

MY FATHER, V.P. SRIVASTAVA.

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*Ranjana Srivastava*



## C O N T E N T S

### Page

#### PART - I

Introduction .. ..	1 - 72
Aim, scope and methodology ..	73-75
List of periodicals and composite books documents ..	76- 80
List of abbreviations ..	81- 82

#### PART - II

Annotated Bibliography	83-238
------------------------	--------

#### PART - III

Author index .. ..	239-246
Title index .. ..	247-260

# **PART I**

## I N T R O D U C T I O N

Among the dramatic changes in human ecology which have been brought about by the unprecedented and accelerating growth of the sciences and technology, two stand out as presenting problems of peculiar scope and urgency. First, of course, are those resulting from the liberation of fission and fusion energies of the atom; these are the subjects of daily discussion. The second category comprises the profound ecological disequilibrium brought about by the world wide application of scientific medicine and public health to reduction of death rates without corresponding reduction of birth rates. The resulting explosive increase in population which is outpacing any practicable increase of resources, is a cause of grave concern to every thoughtful observer of human ecology. The two categories are interwoven because the pressure of population growth on natural resources has throughout history been an exciting cause of aggressive and often military expansion and warfare.

## DEFINITIONS OF POPULATION

The state of a country with respect to numbers of people; the degree in which a place is populated or inhabited; hence, the total number of persons inhabiting a country, town, or other area; body of inhabitants. (Oxford English dictionary).

### Population

1. All the people in a country, region etc.
2. The number of these
3. A (specified) part of the people in a given area.
4. A populating or being populated
5. in biology, all the organisms living in a given area
6. in statistics, a group of items or individuals.

## POPULATION EXPLOSION

The very great and continuing increase in human population in modern times. (Webster's New Twentieth Century Dictionary).

The population problem has become one of the most fundamental of all human problems. It affects every aspect of man's social life - individual, national and

international. It affects the health and happiness of individual families; it affects the material prosperity and social progress of nation,; and it affects international security and peace, for problems of population pressure are connected, albeit latently, with issues of peace and war.

And to many countries of the world today - free and colonial, developed and underdeveloped - no socio economic issue is more grave or more urgent than that of population growth. The question of over population is mainly a matter of "too many people in relation to the whole set of facts" or the sum of resources of all kinds. Whether the problem takes the form of tremendous pressure of population on a country's available land and other resources or a conflict between a high fertility cultural milieu and a desire for a higher standard of living, or the degree of technology development, being inadequate to cope with material needs, the socio economic conditions in many countries are such that rapid population growth militates against rising standards of living. The nature and degree of the incompatibility are of course complicated by factors such as political status, religious and social taboos, and colour and cultural barriers to the free migration of peoples. None the less, in most countries, particularly

under developed ones such as our own country, excessive population growth defers or nullifies most programmes for improvement in education, public health, sanitation and rural recovery. Apart from the staggering total of the world's population and the rapid pace at which it is growing, there are two other disturbing factors in the present world demographic situation. One is the international unevenness of population distribution and the other, the unevenness in the growth of national populations. And perhaps the most disquieting feature is that great majority of the world's populations, including an overwhelming part of our own population, has a poor standard of living. Despite the great advancement of modern science and technological skill, a majority of the world's people are denied even the bare necessities of civilized existence. The level of living of the world's population as a whole has not risen proportionately with the growth of population and particularly in south east Asia and Latin America. On the contrary, in some regions agricultural production is not only not increasing but is actually dwindling. As far as natural, non-renewable resources, they do not, of course, increase with the growth of population.

Nowhere is the difficult situation more in evidence than in India, where the population problem has become

alarming in recent years.

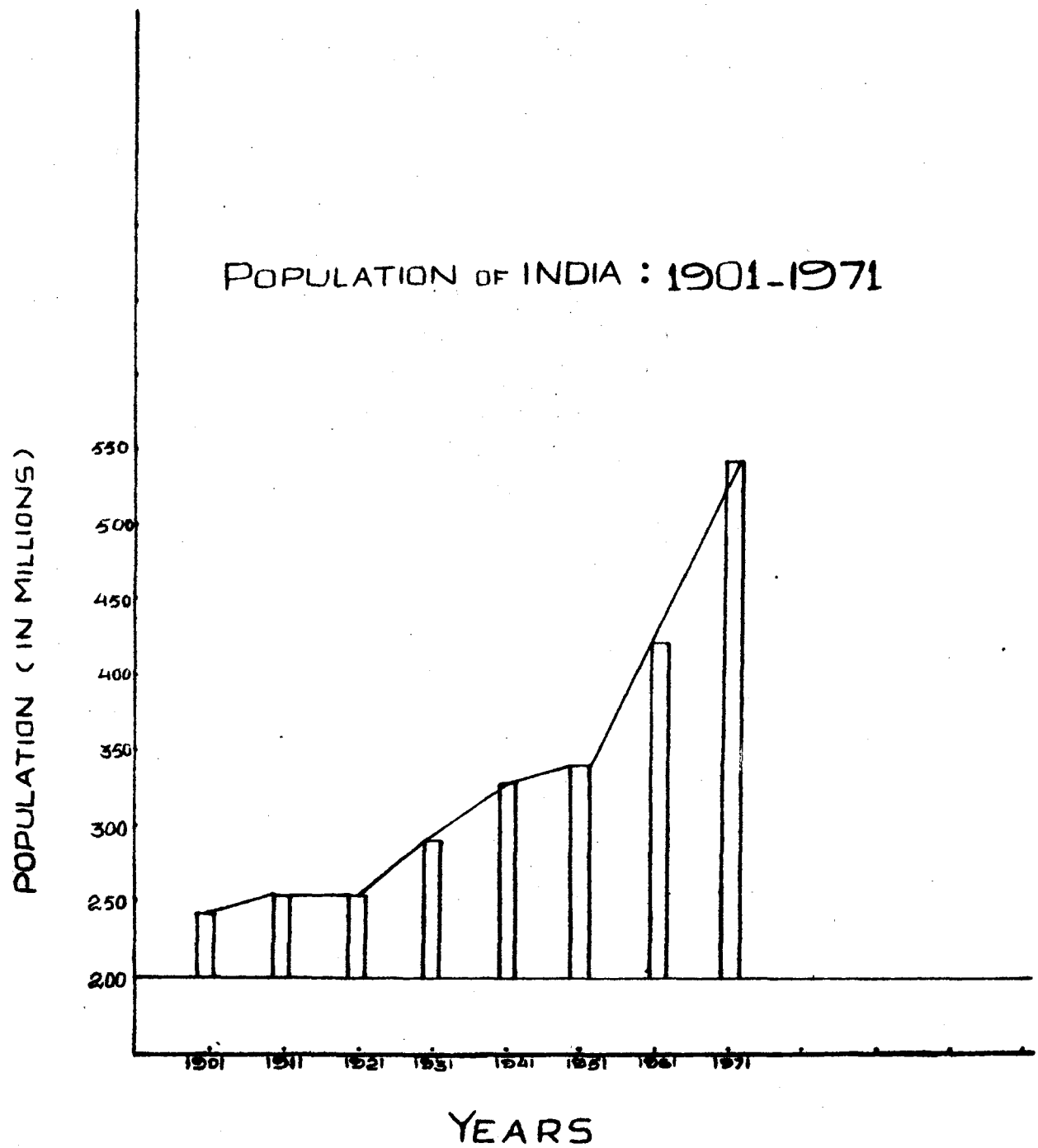
India's population problem arises primarily out of an extremely high fertility accompanied by a relatively high but declining mortality. The resulting increase in population, which amount to nearly five million a year, apart from its very low survival value, need not constitute for us problem if the Indian level of living are veryh high enough to absorb the additional population without reducing the existing standard of living. But our level of living is so low that any further addition to the number of poor families may wellbe disastrous, and as they are so numerous it may be generalized that the total population as such will find further increase a great problem. India's density in agricultural as well as in the poorer strata of urban society, though not as great as in certain crowded parts of the world, is too great to permit an attitude of laissez-faire; it is difficult to see how more people could be taken care of adequately at the present level of national production.

The net addition of 4 or 5 million a year or about 50 million in a decade, or a grand total of 365 or more million in India can be an asset and become really a resource if an over-whelming majority of the population, not to speak of every man, women and child, enjoyed the

irreducible minimum requirements of decent human existence in terms of food, clothing, shelter, education, health employment and leisure for recreation. But this is not so in India, and, what is worse, is the well known and depressive qualitative aspect of our population problem. And as the quality of the people is related to the quantity, it cannot be improved, in the context of our available resources without controlling the quantity. Hence the danger in the number of India's teeming millions not only to her overall economic and social development but also to her place in modern world.

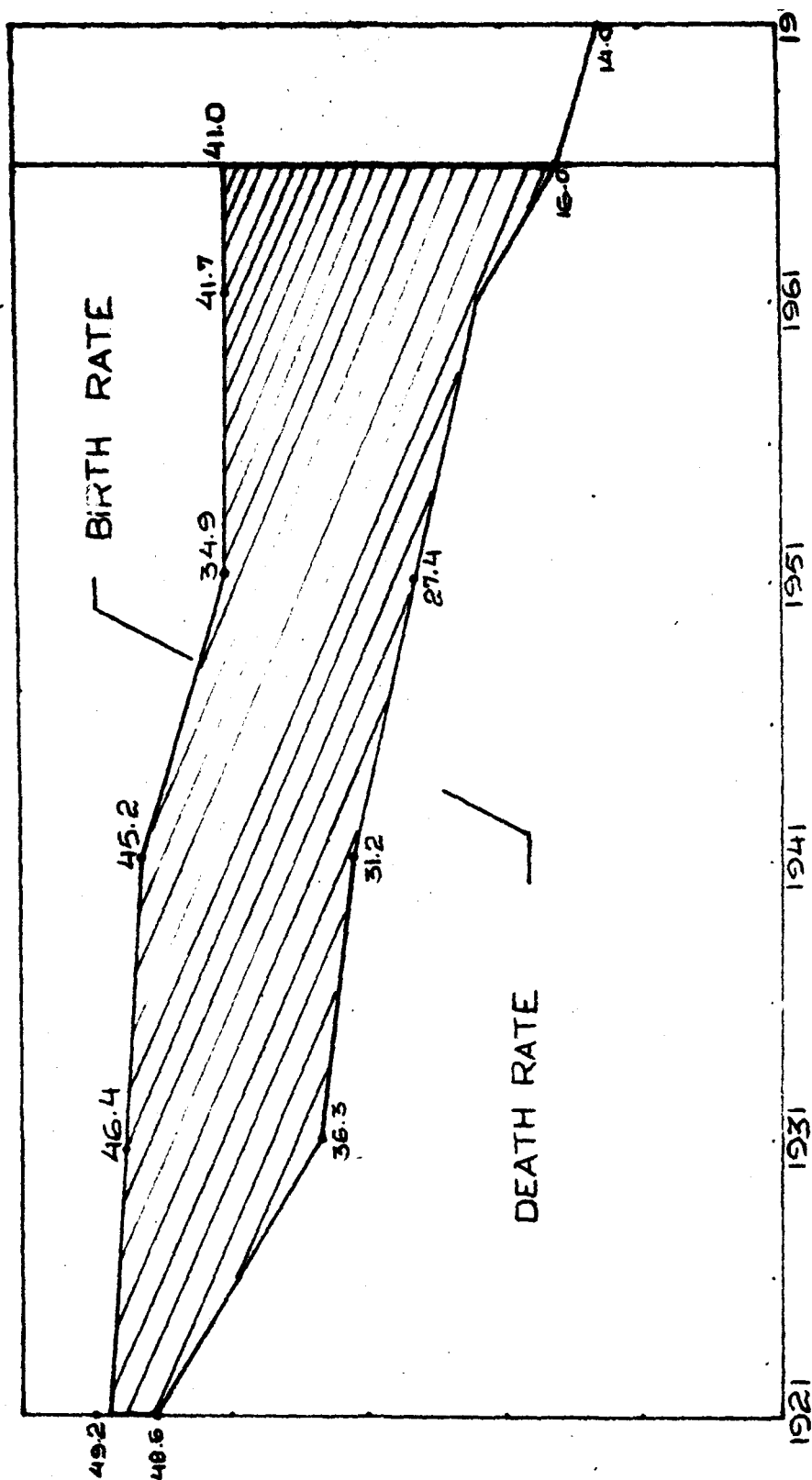
The decline in the infant mortality rate has been very impressive, particularly since 1921. This refers to the number of infants under one year, who die per 1000 live birth, in the course of a year. This is a very sensitive index of the total public health situation. From 1901 to 1921, the average infant mortality rate was around 220. From 1921 to 1936, it came down to about 174. Since 1951, it has fallen steeply and is around 100. It is true that this rate is considerably higher than the rate in industrial societies. During 1956 - 60, it was 36 per thousand in Japan and 25 per thousand in United States. The lowest infant mortality



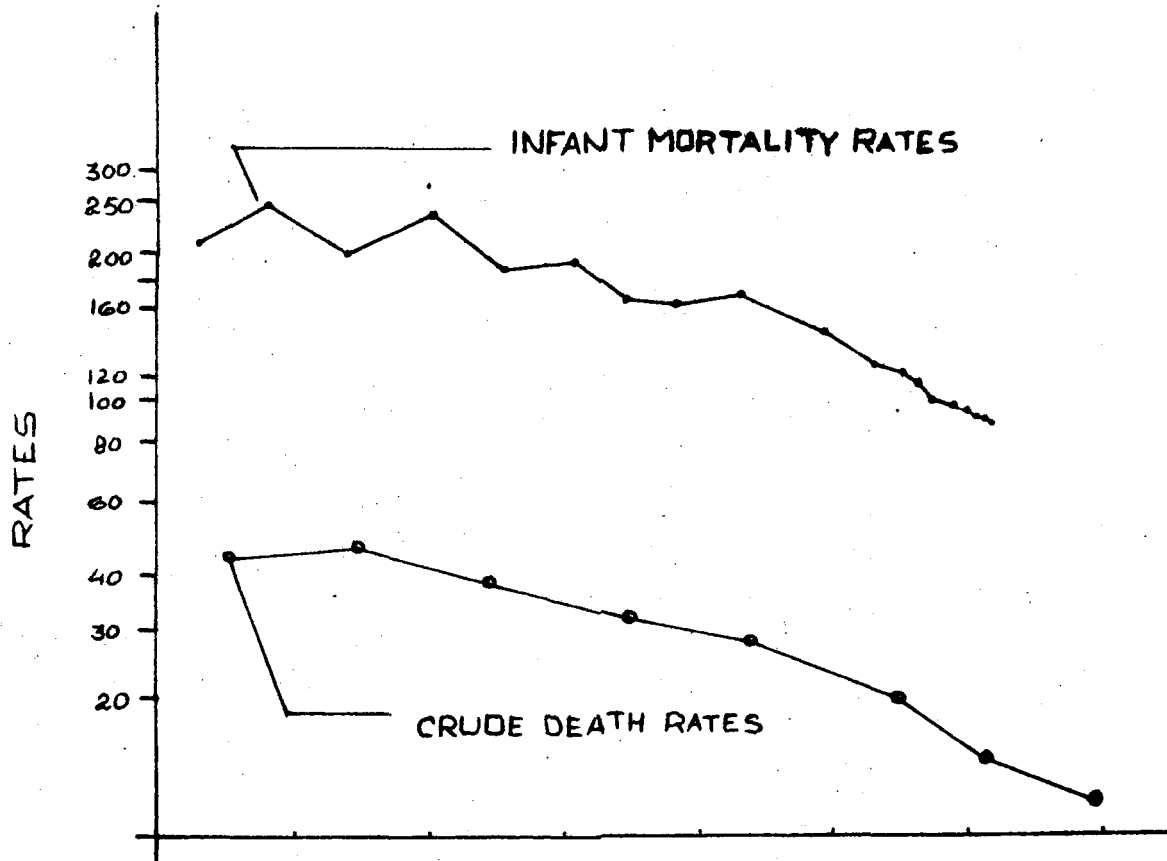


( Fig. 1 )

# BIRTH RATE and DEATH RATE



( Fig. 2 )



( Fig. 3 )

rate was in Sweden which was only 17 per thousand. This reduction in India from 220 in 1901 to 1921 to around 100 since 1951 is really a very impressive success death control.

Infant mortality may be grouped roughly into two main classes, namely, those dying within one month (neo-natal mortality) and those surviving the first month of life but dying before they complete their first year. Deaths in the first group are due primarily to pre-natal and natal influences. The second group covers those who have succumbed in the main to causes arising from post natal influences such as the various epidemic diseases, diseases of the respiratory and digestive system, faulty feeding, and environmental factors. The reason behind the enormous wastage of infant life in India belong to both these categories and range from ill-advised pregnancies, absence of antinatal care, malnutrition and low vitality of the expectant mother, to meddlesome midwifery of the 'dai' and poor mother craft.

There is a close relationship between decline in infant mortality rate (fig. 2). The figure also indicates the influence of drugs, DDT, etc., on mortality

rates. Thus the decline in mortality is more due to improvement in health services than to any improvement in social and economic conditions of the people. The decline in infant mortality rate and in general death rate has been accompanied by an increase in expectation of life at birth. The increase in trained medical and para - medical personnel, DDT spraying, and B.C.G. vaccination for tuberculosis, have all helped to bring d down the infant mortality rate, the general mortality rate and extend the expectancy of life at birth since 1931 and very impressively since 1951. However, since this has not been matched by a corresponding decrease in birth rate, the country is facing the enormous problem of fast rate of population growth.

Why has not this population explosion anticipated by the demographers, economists and other social scientists? According to Gunnar Myrdal, the main reason why the population explosion in India was not foreseen by the experts was that they believed that mortality rate could not be brought down until the levels of living improved. Further, on the analogy of the experience in Western Europe and North America it was assumed that with the increase in levels of living, automatically the fertility rate will go down,

and so, there would not be this problem at all.

The whole position of mortality control has undergone a rapid change since world war II. The extensive use of antibiotics and DDT and other insecticides has enabled mortality improvements to occur in the low income areas in the world. Thus the prewar assumption that mortality improvements are linked with rising per capita income has been completely nullified. Mortality reduction can occur even when there is hardly any economic development.

The growth of population, or its reverse, is affected not only by fertility and mortality rates but also by migration. During the latter half of nineteenth century, there was migration from India to Ceylon, Burma, Africa and other parts of the world. But, though these numbers were quite high, they did not affect substantially the population figures, since they formed a very small part of the total population. Since independence, there has been hardly any scope for the excess population to migrate to other countries. On the other hand, there has been an influx of people from Ceylon, Burma, Africa and other countries. But even these figures do not really affect the rate of

growth of population. Thus international migration of India's population has been negligible. It does not play any significant role in the steady growth of population. It is really the internal movement of population from the rural to the urban areas that is of significance. Gopalaswamy, has clearly shown that there has been a new trend in population growth in India, since 1951, due to 'the combined effect of three important causative factors - the first of these factors is the prevalence of normal conditions of freely available food supply. The second factor is accelerated progress in the prevention of premature deaths. The third factor is the continuance of traditional habits on uncontrolled child - bearing.

#### FACTORS RESPONSIBLE FOR POPULATION GROWTH

A comprehensive explanation of the factors and forces which impinge on human reproduction would take one into several inter connected sciences such as physiology, sociology, economic, psychology, political science, anthropology and medicine.

In a trend report and bibliography on human fertility, Ronald Freedman has provided a classification of variables that affect fertility. They are ;

- 1) The means of fertility control which stand between the social organization and the social norms on the one hand and fertility on the other, that is, the intermediate variables.
- 2) Social norms about family size.
- 3) Social norms about each of the intermediate variables.
- 4) Aspects of the social organization which support the norms for family size by providing social rewards and punishments which depend on the number of children in the familial unit.
- 5) Other aspects of the social organization which affect fertility by their influence on the norms or actual values for the intermediate variables.
- 6) The mortality level which determines how large a surplus of births is required to produce the normative number of children.
- 7) The net migration level, which determines the number and ages of persons available to the families and to the society as a whole and thus affects fertility.



- 8) Factors in the environment which affect the intermediate variables.

The intermediate variables has been spelled out in greater detail by Davis and Blake. They state, the process of reproduction involves three necessary steps sufficiently obvious to be generally recognized in human culture : (1) intercourse (2) conception, and (3) gestation and parturition. In analysing cultural influences on fertility, one may well start with the factors directly connected with these three steps. Such factors would be those through which, and through which, cultural conditions can affect fertility. For this reason, by way of convenience they can be called the 'intermediate variables'.

Following is presented as a more convenient taxonomy of the socio - cultural variables which must be considered for an adequate sociological explanation of fertility.

A. ECONOMIC VARIABLES

1. Productive level
2. Technological level
3. Economic institutions
4. Food supply
5. Public health
6. Housing

**B. POLITICAL VARIABLES**

1. Political stability
2. Attitude of the state towards natality.

**C. SOCIAL VARIABLES**

1. Caste
2. Socio-economic status
3. Kinship organization
4. Forms of holding and inheriting property
5. Literacy and education
6. Social mobility
7. Proportion of working women
8. Urbanization
9. Religion.

**D. DEMOGRAPHIC VARIABLES**

1. Age at marriage
2. Proportion of woman never entering marriage
3. Duration of marriages as affected by divorce, separation, dissolution or death of spouse.
4. Morbidity
5. Infant mortality
6. Adult mortality
7. Migration.

**E. CULTURAL VARIABLES**

1. Norms governing family size
2. Size of parental family
3. Preference for male children.
4. Expense of raising children
5. Economic and social value of children
6. Norms governing age at marriage
7. Norms governing entry or nonentry into marriage.
8. Norms governing divorce, separation and desertation.
9. Norms governing widow remarriage
10. Norms governing voluntary abstinence from intercourse.
11. Norms governing coital frequency
12. Norms governing use or non use of contraception.
13. Norms governing voluntary fecundity or infecundity.
14. Norms governing voluntary foetal mortality.
15. Philosophica - religious attitudes of fatalism, rationalism, secularism, and activism.

A word of explanation on the distinction among above classes of variables is in order. Social variables are operation defined as those variables

which are generally studied under the rubric of sociology, and demographic variables are those variables which generally interest demographers. More specifically, social variables refers to institutions, roles and interpersonal relations, while demographic variables stand precisely for the variable of number or quantitative variation in human society which affects also its quality.

The greater part of cultural variable is taken up by norms. Robin William defines norms as 'standards by reference to which behaviour is judged and approved or disapproved. A norm in this sense is not a statistical average of actual behaviour but rather a cultural (shared) definition of desirable behaviour.' Since we accept this definition of norms, some of the variables have appeared both in the demographic and cultural classes. We feel that there is a real distinction between age at marriage, proportion of women entering marriages, and the proportion of marital unions terminated by divorce, separation and death on the one hand and the cultural norms that govern these areas of behaviour on the other. Certainly, norms have definite consequences for behaviour, but the correspondence is by no means one to one.

The forces that determine the level of the birth rate are primarily social and economic. But the

specific economic and social variables which have an impact on fertility are not the same in all societies. Caste is considered to be an important factor in India's birth rate. But this type of ascriptive stratification does not exist in other societies, at least not with the vigor with which it rules Indian society. So the social and cultural variables which govern fertility levels are intimately connected with the structure and institutions of a given society.

Not only do the factors which influence fertility differ from one society to another, but the same variable can have a different type of relationship to fertility in different societies. Socio - economic status, by whatever instrument it is measured, has a negative correlation with fertility in the industrially developed countries. But in the underdeveloped areas of the world, the relationship between class and fertility is not at all so clear cut. Therefore, knowledge of the precise variables which are important in fertility analysis and the type of their relation to fertility gives us an insight into the dynamics of this social behaviour. By observing the changes produced in fertility by the variance of one or another determinant we have a means of predicting future

behaviour by measuring the present trends of the casual variables.

The demographic situation of any region is largely the product of its peculiar social characteristics affecting in their turn births, deaths and migration. The population problem in India would be very different if the social institutions of early marriage, universality of marriage, the social ban on widow remarriage and the Hindu joint family and other institutions and attitudes resulting in a high birth rate and a sex ratio in favour of males, did not exist. But as these institutions in the a socio religious tradition and cultural sanction behind them exist and condition the lives of an overwhelming majority of the people, the demographic problem has become what it is today.

Early and universal marriage are dominant features of the Indian social scene. Indian girls attain puberty between the ages of twelve and fifteen and though often physically and emotionally immature, they are physiologically ready to bear children. Though

according to the Indian law (the child marriage restraint Act, 1929, Act XIX of 1929) child marriages (males under 18 and females 14 years of age) are punishable offences. But now this age limit has been raised 21 for males and 18 for girls. In India most of the people are illeterate and this adds to population, by bearing child early, with no adequate spacing between child births etc.

The second factor is the universality of the married state. Everyone in India, sooner or later, gets married. It is a quasi religious duty. As an individual's economic security is not usually a pre - requisite to marriage and as there is no individual choice, by and large in obtaining a partner, there is no economic or emotional deterrent to marriage. In the country as a whole, for people of all ages, roughly every other male and more than 3 out of every 5 females are married.

A third striking characteristic of the Indian social scene is the paucity of females. There has been a deficiency of women in the Indian population throughout the whole of her regular census history. This low proportion of females in the population appears to be

relatively steady. The migration of males from villages into towns, added to the high proportion of males in urban areas, contributes to the abnormality of the urban sex ratio. The paucity of women in the Indian population appears therefore to be a fact.

What is the explanation? Some have argued (from a very unbiological point of view) that excessive masculinity in an index of "racial" decadence, but the sex ratio is more unfavourable in the north and north west region of undivided India, parts of present Pakistan, where the so called "marital races" once lived and presumably continue to live. This situation is true within India today. The lowest female sex-ratio is found in the north west region while an almost equal sex ratio is found in South India. We have little knowledge of what constitutes "racial decadence" and still less scientific evidence of the causes and symptoms of such decadence. If there is any truth in this explanation, the supposedly virile people of the north west must be the most decadent people. As we cannot have it both ways there seems to be little truth in this explanation.

Some others, like the census commissioner for Bombay (1921) and the census Commissioner for India (1931),



have offered a biological explanation. According to the former "the Indian endogamous caste with its exogamous divisions is a perfect method of preserving what is called in genetics the 'pure line'. The endogamy prevents external hybridization, while the exogamy prevents the possibility of a fresh pure line arising within the old one by the isolation of any character not common to the whole live. With the preservation of the pure line the perpetuation of all characters common to it necessarily follows. And there is no reason why sex ratio should not be a transmissible character. An excess of either sex may in this view be because either by (1) the birth of more of that sex than of the other, or (2) the possession by the children of that sex of some character which tends to their preservation, probably greater resistance to certain diseases.

The latter, accepting this view, comments, "Whether this(above) proposition be entirely acceptable or not, it may be conceded that if once a caste, whether as a result of in-breeding or some totally different factor, has acquired the natural condition of having an excess of females, this condition is likely to be perpetuated as long as in breeding is maintained. Caste

therefore would appear to be of definite assistance to the Hindu in his superlative anxiety for male children; moreover, since the higher the caste the stricter, in the past at any rate, the ban on external exogamy, this tendency would show more patently in the higher caste and explain why the proportion of females to males increases in inverse ratio to social status." This explanation is at best plausible but we have very little knowledge about the presence of a genetic factor, if any, in the Hindu caste system. Possibly not. While there may be some truth in this explanation in the sense that excessive inbreeding is harmful, it does not explain the sex ratio at birth.

The available statistics tell a different story. Actually, as one would expect, there is a definite excess of male births over female births. This is the view of the Indian Registrar General (1953) but one cannot be too sure of this in the face of obvious lacunae in the registration of births. Any way, males and females are not born in equal numbers and possibly male births are slightly superior in numbers. Secondly, the infant mortality rates for males are higher than those for female infants all over India.

Thus the male babies lose the initial advantage by the end of the first year. Between the ages of 1 - 5, India has an excess of girls but at the next age group, 6 - 10 and subsequently, the sex - ratio appears to be reversed in favour of males.

A more rational explanation for the paucity of females appears to be that though the female infant is definitely better equipped by nature for survival than the male, the advantages she has at birth are probably neutralized in infancy by comparative neglect and in adolescence by the strain of bearing children too early and, too often. As Hindu parents, by and large, at least in rural areas, put relatively a greater premium on male children, they are apt to treat female children with relative and sometimes unconscious neglect, especially when they are assailed by infantile ailments. This, coupled with early marriage and frequent deliveries, results in greater and early death among women.

In India traditions in the sphere of population seem to have been defined in Upanishads. According to some of the fantastic discoveries according to which man cannot gain salvation without being born in this sacred land of ours, possibly explains growth of

population. According to Bhagvad Gita one must have a son because he saves his parents from being consigned into a subdivision of hell. Girls are byproduct in the process of search of boys. There is a powerful strange hold on our minds which has made us incorrigible superstitious, so much so we do not analyse our economy which has grown so wretched that it goes on swelling the ranks of the less intelligent and the beggar.

#### POPULATION GROWTH AND ECONOMIC DEVELOPMENT

The main focus of the developing societies after liberation from colonialism and imperialism is economic development. The fundamental reason for the emphasis on economic changes are : a) the satisfaction of new aspirations for better food, more clothing, more adequate housing etc., and b) better education for one self and for one's children, improved health, travel, relaxation and achievement of social prestige. According to the economic standpoint, the latter are not looked upon as consumption goods, but their gratification for the whole society requires economic resources beyond

the capabilities of the agricultural, subsistence economies. In a subsistence economy, the latter are the privileges of the new and the former are enough only for survival of the masses. The satisfaction of these new aspirations in the masses is possibly only when science and technology are applied to agriculture, industry, transportation and communication. This is closely linked with high levels of general education and technical training. As a result, higher level of urbanisation than in agricultural society is necessary, to bring about economic development.

Schramm and Ruggles have calculated the inter-relationships between literacy, education, urbanization and the gross national product. The following table gives the inter relationship.

INTER RELATIONSHIP BETWEEN ECONOMIC DEVELOPMENT,  
URBANIZATION, LITERACY AND EDUCATION

		1	2	3	4
1. Urbanization	..	-	.68	.69	.66
2. Literacy	..	-	-	.92	.69
3. Proportion of children of 5-14 in school	..	-	-	-	.70
4. G.N.P per capita	..	-	-	-	-

The intercorrelations show how all these four socio - economic aspects are closely related. They appear to form one system so that with the increase of one there is a corresponding increase in the others. The gross national product, is one of the best indices of economic development; it is clearly related to literacy, education and urbanization. If the parents are literate, they send all their children of school going age to school. When the citizens are literate and well educated, they have skills to improve their economic position and that of the country as a whole. The production of the country goes up.

A great gulf divides the economically developed nations which are industrialized and the under developed nations which are agricultural. The significant feature for us is that the developed countries with hardly 30% of the world population contribute 67% of the goods and services in the world as a whole.

According the United Nations estimate a country is looked upon as 'poor' if the per capita income is below \$ 300 per annum and as very poor if the per capita income is below \$ 100 per annum. The income of India is around \$ 50 per annum. It is one of the poorest

countries in the world. India, like many other poor countries of the world including China has the distinction of being not only poor but a highly populated country. One of the characteristics of a poor country is that a high percentage of the labour force is in agriculture and that agricultural production makes a large contribution to national income.

Less than one fifth of the population are engaged in industry, trade and commerce, construction, transportation and communication. It is these industrial categories that really produce wealth, goods and services. This fact helps us to understand the utter poverty in our country.

It is now generally recognized that there is a close relationship between the development of the economy and the occupational structure. Low income per head is always associated with a low proportion of the people working in the manufacture, construction, trade, commerce, transportation and communication. Agriculture is the least remunerative of occupations. Economic progress has been associated with a decrease in the proportion of population engaged in agriculture

and an increase in those engaged in manufacture, trade and transportation. In particular economic development is associated with the manufacture of goods using machines and non-muscular sources of energy. This is also true of transportation. Poverty has been characteristic feature of India because agriculture is a gamble depending on monsoons. Further, it is a seasonal occupation imposing enforced idleness on the people for several months in the year. The five successive plans have not made any change in the excessive dependence of gross national production on agriculture.

There exists a close relationship between the growth of population in a country and its economic development. The two interact on each other very closely; each affects the other. According to the theory of demographic transition economic development has a significant impact on growth rate, on population after industrialization, since the end of the eighteenth century. Before an economy undergoes development, there is population stability because of high fertility rate and high mortality rate. The birth rate is high because in pre-industrial societies marriages are universal and take place at an early age. There is also



the economic necessity; children start working early, since facilities for formal schooling are not available and their work or earning, supplements the family income. Since death rate is high, the family must have many children so that at least some will survive. One of the characteristic features of pre-industrial society is high infant mortality. It is because of high death rate there is no possibility of population explosion in the pre-industrial society. With economic development there is an improvement in diet and standard of living of the people. With the application of knowledge to living conditions, not only does food production improve, there is also an improvement in the medical facilities. Public health measures become increasingly effective and there is a decrease in death rate. It is when death rates fall, but birth rates do not, that the Malthusian theory of population is valid. But with a higher rate of economic growth, there is a deliberate limitation of the size of the family. There is a wider use of contraceptive devices so that birth rate also falls. The change in the structure of production, leads to a decline in the importance of the family as a production unit. Due to higher aspirations, children are sent to schools and

training institutions rather than being allowed to work in the house or outside the house. With the women also going to work outside the house, the house and family lose the old significance in terms of production. A small family facilitates economic mobility. All these changes reduce the economic advantages of a large family. In fact, with economic growth a large family becomes a disadvantage; with the increase in the cost of education and equipping the children to take their proper place in the non agricultural and urban society, a large family becomes a burden. With the adoption of the small family norm, the birth rate declines and the rate of population growth slows down. Thus, with economic development small families and low mortality rates become the characteristic pattern. The birth rate and death rate become almost equal and a gradual rate of growth of population is re-established; as in pre - industrial stage, the population in an industrial society becomes fairly stable.

Thus, with economic development great changes take place in the family as well as in the society. Improved standards of living lead not only to fall in death rates but also fall in birth rates so that the

rate of population growth is slowed down. Because infant mortality is reduced and because children have to be well educated, the desire for a large family, a conspicuous feature of an agricultural society, is replaced by the desire for a small family, the characteristic feature of an industrial society.

Population growth is a stimulant to economic growth up to a point, but afterwards, as we are today witnessing in India and other under developed countries, it constitutes a serious impediment. A large population provides abundant labour as well as a big market for consumption, when a country is under populated; but if the population growth continues in an over populated country, it is a serious menace to economic development.

Population growth necessitates large import of food grains, which consume a large amount of foreign exchange which otherwise would have been available to promote economic growth. Though the food production increased during that period it was not enough to feed the excess population.

High fertility rate increases the number of children and thus brings about a high proportion of dependents population which is unproductive. This is

one of the main reasons for the increase in the unrest in the country in the recent years. So the country remains poor and under developed. There is also another aspect - Frequent maternity disables a large number of women; they cannot participate in productive activity for fairly long periods frequently.

Another very serious consequence of fast growing population is that it reduces the capacity to save and invest. Capital formation is the most crucial aspect of economic growth. All the resources are used in supporting the growing and unproductive population so that the family as well as the country continue to live in poverty. The per capita income is too low to leave any margin for saving and productive investment. This also reduces the purchasing power of the people and so there is deficiency in effective demand which in its terms affects production. Thus, there is a vicious circle. Thus over population and poverty are very closely linked.

As Ashish Bose write, "The present reproductive pattern in India is wasteful, uneconomic and highly inimical to the health and wealth of the nation. Further, the size, density, rate of growth, and age

structure of the population are all unfavourable to economic progress. Our land is limited, capital is scarce, and organization is inefficient. Vast natural and human resources in themselves cannot bring about economic progress; they can only sustain a primitive economy. And that is what is actually happening in India."

A fast growing population also aggravates the unemployment problem.

#### OVER POPULATION AND UNEMPLOYMENT

The problem of unemployment and under employment has been a serious problem facing the country since many decades. With growing population there is excessive pressure on land. More people are engaged in agriculture than is really necessary. This surplus when withdrawn from agriculture will not lead to any diminution in the agricultural output. Economists estimate that the withdrawal of the surplus labour may even increase the output. However, since Indian economy under developed, it is unable to absorb the growing rural population; traditional agriculture is

not profitable; the rural people still cling to land because it gives them social prestige. Agriculture in India is notorious gamble; if there is good rainfall there is prosperity in the rural area; if there is failure of monsoon, there is near famine condition in the rural as well as in the urban areas. The present experience has shown, that in spite of the "green revolution", the failure of monsoon in 1972 has absolutely crippled the food situation so that the government has taken over the wholesale procurement of wheat and paddy with all its consequences and import of six million tonnes of food grains. As a result the Indian farmer is in a state of chronic indebtedness; he lacks capital, education and skills to adopt the new techniques.

In the urban areas again there is a surplus population due to two reasons; excessive increase in population and a steady migration from the rural areas of illiterate and unskilled people. Further, there is the problem of unemployment among the educated people. With the increase in educational facilities, there is a tremendous increase among the matriculates and the liberal arts graduates every year who want only white collared jobs.

One of the paradoxical features of the Indian situation today is that while employment is increasing with the implementation of the successive five year plans, there is also a steady increase in the number of the unemployed people.

The main reason for this situation is that the opportunities of employment have not kept pace with the additions to the labour force as a result of the rapidly increasing population. Another reason is the highly literary character of education. Such education does not fit the young persons for any particular job in life.

One of the principal objectives of the economic planning is to increase production by expanding the employment opportunities; thus, one of the objectives of planning is to mitigate the unemployment problem.

Economic planning has not been able to solve the problem of unemployment because the population is growing at an alarming rate. Planned development has not been able to create as many jobs as required by the actual growth of population.

### POPULATION, GROWTH AND CAPITAL INVESTMENT

One of the major needs of the developing countries is, additional investment on highways, railroads, communication systems, electric power generators, irrigation pumps and so forth. As important, if not more important, is investment in human beings. Efficient application of the existing technology needs not only literacy but fairly good education. One of the scarce resources in an underdeveloped country is capital and one of the abundant resource is illiterate and unskilled population. India has been trying to get the capital from internal resources as well as by loans from foreign countries.

The point for consideration is how a decline in population growth rate achieved through fertility reduction, affects the ability of the country to raise additional capital, to increase its productivity. A decline in fertility will result in fewer dependents per wage earner and so he can be motivated or forced to save a larger proportion of his total income. There is another aspect. A nation with a growing population has to spend a certain proportion of its investable capital, merely to provide the additional population with the same amount of capital equipment per person already enjoyed by the



existing population. A growing population, will need additional housing, school building, hospitals and so forth. In other words, not all the capital available can be spent on capital improvements which will increase the per capita productivity and raise the level of living.

Coale and Hoover have shown, how their projected 50 % decline in fertility might affect the total amount of capital investment, the proportion of total capital which can be used for improving productivity rather than in providing for population increase; as a result there will be an increase in income per equivalent adult consumer.

The only way to step up capital formation is to lower the birth rate so that the population becomes stable or grows at a slower rate around one % per year. An increasing population actually means an increasing dependent youth population and a continuously decreasing proportion of the economically active population; and a continually increasing expenditure to meet the needs of the additional dependent population.

The primary implication of the demographic variables in economic planning is that the efforts and resources of the economy should be diverted from current consumption to the enhancement of the future productivity. It is the rate of net investment on factories, roads, irrigation, fertilizer plants, and such other productive facilities well as on education and training, which are crucial for economic development and not mere stepping up of expenditure. The important thing is the mobilization of resources for productive purposes. This is where the effect of such investment is linked with the type of rate of increase in population. If fertility continues without any reduction, in the percentage of the dependent young, the economic development at a significant rate cannot take place. Consequently current consumption will eat up the capital and the little will be left for investment in the growth in productivity.

If there is no reduction in the size of the family, it is difficult, if not impossible for it to save in order to increase capital formation. As Coale puts it, 'High fertility can depress private savings in two ways! (1) by reducing the volume of saving by

individual families when such savings are an important component of the national total; (2) by increasing the proportion of national income that must accrue to non savers if standards of consumption play any part in determining the earnings of the low income families'. The situation is similar when it is the government rather than private entrepreneurs that provide a large proportion of national investment. High fertility affects the level of investment through its effect on the capacity of the Government to raise money by taxation. Thus, a conclusion is obvious that a low fertility population can achieve a higher level of net investment than a high fertility population. If the families in the population are large rather than small, more construction efforts must be diverted to house building and school building rather than for factory building or putting up hydro - electric plants so necessary for economic development and social welfare. It is also obvious that a population growing at a slower rate will have a higher per capita income when the national production increases.

Thus , fertility reduction and stepping up investment in the productive capacity of the economy

are both essential for economic growth and the decrease in the poverty of the masses.

#### POPULATION GROWTH AND BASIC NECESSITIES OF LIFE

Article 38 of the Directive Principles of State Policy of the Indian Constitution lays down, 'The State shall, in particular, direct its policy towards securing that the citizens, men and women, equally have the right to an adequate means of livelihood.' The Government of India, in its Resolution of March 1950, asserted that the aim of planning in India is to promote rapid increase in the standard of living of the people by efficient exploitation of the resources of the country, increasing production and offering opportunities to all for employment in the service of the community'.

The basic problem facing the country has been the utter poverty of the vast millions. Yet the rapid growth of population has nullified the efforts of planned economic development.

Poverty is a relative term implying that the poor man does not possess what the rich man possesses.

Notions regarding poverty and riches vary from country to country and from time to time in the same country.

Though it is impossible to define the terms poverty, it is possible to describe some indicators of poverty for the time being. It is possible to state that a monthly income below a certain level today, will not be sufficient to provide the basic necessities of life at the current prices. Most poverty in India is involuntary. It is due to low productivity of labour.

Poverty in India is due to social and environmental reasons. The millions of tribal people, the scheduled caste people, the agricultural labourers, the small farmers and the artisans are poor because they are using primitive technology and were prevented by social traditions from improving themselves till 1950. It is the Indian Constitution which has tried legally to lift the social barriers in the way of their social mobility. It is also since 1950 that the Community Development Project has been trying to improve the technology so that productivity of labour can be increased. Still, millions continue to be poor. The Five Year Plans have not been able to make any dent on the

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situation. The problem is further complicated by the fast growth of population.

To prevent poverty from being self perpetuating each family must be ensured a minimum standard of living so that the children are brought up with ambition and be in a position to utilize the opportunity to break the chain of poverty. As Galbraith wrote, "the first and strategic step in an attack on poverty is to see that it is no longer self perpetuating. This means ensuring that the investment in children from families presently afflicted be as little below normal as possible. If the children of poor families have first rate schools and school attendance is properly enforced, if the children, though badly fed at home, are well nourished at school, if the community has sound health services and the physical well being of the children is vigilantly watched, if there is opportunity for advanced education for those who qualify regardless of means, if, especially in the case of urban communities, law and order are well - enforced recreation is adequate then there is a very good chance that the children of the very poor will come to maturity without grave disadvantage."

## FOOD

One of the chronic features of India is the utter lack of proper nourishment for the bulk of the population. It is estimated that about 25 to 30 % of the people are under-nourished. The incidence of malnutrition is even greater. According to Sukhatme, 'the evidence indicates that it is far higher and can be placed at least at fifty percent for India as a whole. Further, the majority of the under - nourished are also mal-nourished.' Thus the problem facing the country is to find the means to supply adequate food to existing and the growing population so that there is the elimination of under nourishment and mal - nourishment in the country.

As Madalgi writes, 'food problem in India is essentially a food grains problem' since the vast majority of the Indian people have very low levels of income. It is estimated that over sixty percent of the population has a per capita consumer expenditure of less than fifty paise per day. So there is no question of the consumption of protective foods like vegetables, fruits, milk etc. The vast - majority of the people live on cereals.

Since the population is increasing at about 2.5 %, the food production programme will have to be planned on this basis. Since there is very limited scope for bringing additional land under cultivation, the strategy is to concentrate on intensive agriculture by the expansion in the supply of fertilizers, plant protection materials and farm machinery and fully exploit the possibilities of high yielding seed varieties. It was the aim to stop import of food grains from 1971. However, since there was wide spread failure of the monsoon in 1972, the Government was forced to import foodgrains.

The food grain production has not only to meet the demands of the additional 10 million or more population per year, it has also to meet the demands arising out of rapid urbanization. The following tables shows the unprecedented increase in the urban population since the second world war.



## TRENDS IN URBAN POPULATION

Year	Urban population (Million)
1921	..
1931	..
1941	..
1951	..
1961	..
1966	..
1971	..
1976	..

It is estimated on the basis of sample surveys that the urban population has been increasing at the rate of four per cent during the sixties. In order to maintain the stability of food prices in the urban areas, the supply of food grains will have to keep pace with the increase in urban population.

The third factor which determines the magnitude of the demand for food grains is the per capita income. An increase in the per capita income raises the effective

demand for food grains; there is a greater capacity to buy, in the light of the fact that a large mass of the people are below the subsistence level, this implies a higher level of consumption.

With the increase in urbanization, with the increase in per capita income and with the increase in general awareness regarding the value of protective foods, such as vegetables, fruits, milk and other dairy products, poultry, livestock, and their products, long term programme for a balanced diet for the population has to plan for adequate production of these food products also.

The emphasis in the last few decades has been on food grains because over sixty per cent of the households, spend less than Rs. 19 per capita per month on food. According to Sukhatme, about one-third of the population is under nourished. The calorie intake is far less than the average of 2,000 among millions of people. The joint committee of the Indian Council of Medical Research and the Indian Council of Agricultural research had recommended a diet yielding 2,700 calories per day.

Thus, the aim of the food policy should be, not only to step up food grain production to meet the demands of the fast growing population and to avoid the import of food grains, it must also be to step up the production of protective foods, so that the minimum consumption of 2,700 calories a day is possible. As Agarwala puts it, 'for every 10 million increases in population, roughly two million tons of food grains, half a million tons of fruits and vegetables and four to five million tons milk and animal products will be required.

### CLOTHING

As for clothing, it is very difficult to make an acceptable estimate since warm climate needs little clothing. Though India has been from times immemorial, a cotton producing and cloth manufacturing country with world fame, the vast majority of people have hardly had sufficient clothing. This is one of the reasons why Gandhiji emphasised the need for the intensification of cloth manufacture as a cottage industry, so that each family could produce by its own labour, cloth sufficient for its needs and a surplus which would enable it to buy the other necessities.

While the growing population has resulted in food deficits, there is no such problem regarding cloth manufacture, since India is a leading exporter of cotton as well as textiles. The problem, is one generated by poverty. The average Indian is so poor with a per capita income around less than Rs. 30 a month, that he is not able to purchase the necessary clothing for the members of his family. Added to low income, there is the problem of the large family. With a low income and a large family, he is unable to provide himself and his family with anything but mere foodgrains; he is not able to provide any protective foods; he is unable to purchase the clothes necessary; he is unable to have a shelter. According to National Sample Survey results, the bulk of the people spent 70 % of their income on food. So they have very little money left for expenditure on clothing, housing, rent etc.

According to National Council of Applied Economic Research and the Statistical outline (India, 1970) the per capita consumption of cloth in India is 14 meters of cloth per person per year. This figure reveals the utter poverty of the people. The present per capita figure, clearly indicates that millions of the poor hardly purchase any cloth at all. It is a familiar

fact that the maid servants, sweepers, gardeners and others in the cities, ask for old clothes to wear, because they cannot afford to buy clothes. But there is also a social norm that is in operation here. It is not a mere economic phenomenon. It is estimated that a sweeper's family in the cities earn not less than Rs. 300 per month, because the husband as well as wife work and often the grown up sons and daughters also are appointed by the Municipality. Still, the vast majority of the sweepers move about wearing torn clothes. This is because of the social norm that is operating.

Now, to go back to a consideration of the impact of population growth on cloth consumption, the NCAER has given figures to show that the total consumption of cloth increased from 3,630 million yards in 1950-51 to 6,362 million in 1955-56 or an increase of almost 75% during the first plan period. Though the production is increasing, it is not keeping pace with the increase in the population; so there is continuing poverty since the per capita consumption does not increase. The aggregate increase in consumption is not reflected in any increase in the per capita consumption (NCAER 1962).

## HOUSING

Housing constitute, one of the most universal forms of material culture in human society. It also represents an important element in all capital formation, whether for the individual or for the nation. Housing constitutes the largest single component in the total building effort of any nation. There is also the social aspect. Housing plays a major part in ensuring the continuity of community life.

According to the current opinion in the European countries, the lower limit of housing area should be 170 sq. feet of floor area per persons in the family. In the developing countries in Asia, Africa and Latin America it is estimated that it is less than 20 square feet per person. Thus a large population and a small floor area of housing per person appear to go together. The vast majority of people in the under developed countries, like India, live in substandard houses; many of them have no houses at all, living as they do on pavements or below trees.

## SHORTAGE IN HOUSING :

The United Nations have recommended the construction of at least 10 houses per 1,000 population per year,

in order to neutralize the backlog and to meet the future demand. But the present annual rate of new construction in India, is reported to be only in the neighbourhood of two houses per 1,000 population. It is also estimated that the rate of deterioration and depreciation of the existing housing stock is at the rate of 2 % per annum.

So the problems that are facing the house construction programme : to make up the backlog, to provide for reconstruction of the houses that are deteriorating and to build houses for the additional population which is increasing by ten million per year in the country as whole, or about 2.5 million additional housing units for the country as a whole per year.

The impact of the high rate of population growth on the housing deficit is threefold :

- (1) High birth rates and falling death rates result in larger family size. More babies means more over crowding in the already cramped dwellings.
- (2) High birth rates and large family size mean more babies and more family expenditure. This

adversely affects (a) the rate of family savings, and (b) the rate of increase of the national per capita income. Unless these low - income families save, they cannot invest in private houses or hope to pay higher rents for better housing.

- (3) Future population growth : The current situation with respect to population growth and housing conditions is complicated. The prospect for future rapid growth adds to the gravity of the problem.

In terms of housing needed or of new housing required in the future, the rate of growth of the adult population is the most relevant factor. By studying the age distribution of a population, an estimate can be made of the number of housing units needed in the future.

Two of the major problems confronting the cities are acute shortage of housing and inadequate municipal services because the slums are increasing. There is a natural increase of two percent and an increase by migration from rural and other areas by three percent,



or roughly there is a five percent increase in population per year; a city of 1,00,000 population needs at least an increase of one thousand houses per year. The actual construction reported is only one-fifth of this demand. Thus, the slum conditions are constantly increasing.

#### Population Growth and Social Services

Provision of facilities to improve the health and educational level of people is a basis to improve the quality of the human beings and their efficiency. The health and education services are generally known as the social services.

In the preamble to the constitution of the World Health Organization, health is defined as "a state of complete physical, mental and social well being and not merely an absence of disease or infirmity." The quantity of the various types of medical facilities available, namely, the medical personnel, hospitals, clinics, medicines and so on give some clue to the well being of a nation.

The educational level of a country can be understood in terms of the percentage of the literates, the proportion of children of school going age who are

in school, the extent of the vestage and stagnation etc. These are all indicators of the level of education in a nation. Another aspect is the facilities provided for such important educational efforts such as agricultural extension work, technical training for the workers in the industries and so forth. The quality of the teachers and the quality of the teaching techniques and teaching aids are very important to determine the quality of the education that is being imparted.

In a succeeding sections an attempt will be made to study the way in which rapid population growth has prevented the improvement of the educational and health facilities in India.

#### EDUCATION :

One of the important tasks of education in India is to counteract the attitudes antagonistic to development and promote the speedy dissemination of attitudes, knowledge and skills favourable to development. As a society stagnant over many centuries, the attitude towards education is that it equips one for personal development or to do the clerical and administrative jobs with efficiency. This attitude is totally antagonistic

to development. The task of education in the modern context is to develop rational attitudes in the children so that they acquire the knowledge and skills which will help them in developmental work. "In general, educational policy must have the central purpose of directing and apportioning educational efforts so as to give a maximum impetus to national development." On the contrary, the rapid increase in population is making the country to concentrate on the rapid expansion of educational facilities to meet the needs of the situation and so there is a cry on all hands that the standards of education are falling.

Most of the people of India are unable to read and write. Thus liquidation of illiteracy is one of the main tasks facing the country. Despite of the steady increase in the percentage of literacy, there has been a steady increase in the total number of illiterates because of the rapid increase in population from decade to decade. With respect to the need of knowledge regarding the fast increased in population, the Education Commission observes, "More persuasion or coercion cannot arrest population growth; people must understand the implication of unchecked increase in population, acquire some knowledge of the laws of life and appreciate individual responsibility

in programmes of family planning. "The result of the fast rate of growth of population at 2.5 per cent per year, an estimated 13 million being added to the population every year, have intensified the programmes to bring the dangers of over population to the attention of the people and to make them realise the need to limit the individual families so that there could be a substantial improvement in the level of living of the family and thus of the nation as a whole.

Rapid increase in population has nullified the progress made in educational field; there is an increase in the number of illiterates in the country inspite of the rapid increase in primary school enrolment.

#### Population Education in Schools

Till now there has been very little done to introduce population education in schools. The Family Planning Association of India has been carrying out pilot projects on population education in Bombay and its environs and in Dharwar and its environs. The National Council of Educational Research and Training as well as the Central Health Education Bureau have been

preparing the syllabi to be incorporated in the school curriculum.

### HEALTH

Improved health condition are intimately related to increase in efficiency. In India the number of medical colleges and doctors have increased considerably. Yet doctors are not easily available to people this is all due to high population growth. The situation in rural areas is much worse than in the urban areas, where merely four fifths of the people live. The health centres in rural areas do not have adequate supply of drugs. One of the chief problems facing the health services is to persuade the doctors to do work in rural areas. The facilities are so inadequate in the hospitals and the civic amenities are so inadequate that the doctors are unwilling to work in rural areas.

Better health conditions can be secured by improved medical facilities, better sanitation and hygiene and higher living levels, particularly in regard to nutrition. But the supply of all these factors is dependent on the economic level and a population that is increasing. Two-thirds or more of total private consumption expenditure is with respect to food, the intake of nutritious food is at a low level. It is

It is estimated that something like 75 % of the incidence of physical disabilities, other than those due to infectious diseases, can be prevented by suitable food. The country is thus in the grasp of a vicious circle; the main cause of under nourishment is poverty; dietary deficiencies reduce people's ability to work; these situations perpetuate both poverty and under nourishment.

Due to the increasing population the increased personnel as well as the increased facilities do not meet with the demands of the situation and there is a general cry that the health facilities have deteriorated. It is because the population problem has been causing grave concern, that there is emphasis on Family planning in the Primary Health Centres.

#### POPULATION POLICY OF INDIA

As an agricultural country the central problem of India's economy has been the utter poverty and the low level of living of a great majority of the people. The task of raising the level of living of the people has been nullified by the unprecedented rise in the population growth. The level of consumption of the basic necessities of life in terms of food,

clothing, housing, educational opportunities and health facilities has been distressingly low for the average citizen and actually hundreds of millions are living below the poverty line. Though in the last quarter of a century India's agricultural and industrial production have been impressive in relation to the conditions before independence, the level of living of the vast majority of Indians continue to be below the poverty line. The gains in the national income have been diluted by the rapid increase in the population so that the per capita income continues to be less than a rupee a day.

As Chandrasekhar writes, " The basic economic problem is really demographic." A statement of India's population problem can be summarized as follows: How can India raise the standard of living of her people and cut down the still relatively high death rate when it is so difficult to support the existing population at a low standard of living, if the population continues to increase at about 13 million every year?

It is this problem that has led India to formulate her population policy. A policy is a deliberate attempt to solve a problem instead of leaving

events to shape themselves. India's population policy is a deliberate attempt to meet the current situation. Though there was population policy as such in India in the past, the individual families desired a large number of children since the infant mortality rate was high, and since a large family is an economic asset in an agricultural economy, and since a large family did not mean an economic burden because the level of living was low. A pair of hands could feed the additional mouth.

Before independence some social scientists as well as some political leaders were aware that India was facing the Malthusian dilemma, that her population was growing so fast that it endangered any substantial improvement in the standard of living of the vast masses of people.

Marxists like Dutt believed that it is under development rather than over population that was responsible for the utter poverty of the people. He wrote "what makes the decisive difference between the conditions of India and Europe is that the economic development and extension of production which have taken place in the European countries and have facilitated a



more rapid growth of population have not taken place in India, and have been artificially arrested by the working and requirements of British capitalism, driving an increasing proportion of the population into dependence on a primitive and over burden agriculture.

The Government of India recognized the implications of unchecked population growth for its economic and development plans and was the first country to adopt a family planning programme as an integral feature of its Five Year Plans. The programme was started in the First Plan period as early as 1951. The first five year plan observed "The recent increase in the population of India and the pressure exercised on the limited resources of the country have brought to the forefront the urgency of the problem of family planning of population control. The application of medical knowledge and social care has lowered the death rate, while the birth rate remains fairly constant. This has lead to the rapid increase in the growth of population. Population control can be achieved only by reduction in birth rate. This can be secured only by the realization of the need for family limitation on a wide scale by the people. "It consisted of the opening of some family

planning clinics where the contraceptive advice was given. In the initial stages the approach was very conservative. However, a dramatic change occurred in 1965 when a decision was taken to give the programme a new shape, operate an active outgoing extension methodology and greatly expand its resources. To bring in these dimensions a separate department of Family Planning was created in the Central Health Ministry in April 1966.

The programme is developed as an integral part of health services, in particular with MCH work. Under the Indian Constitution, the responsibility for health activities rests with the State Governments and consequently so also for family planning work. However, currently the entire cost of family planning component is borne by the Central Ministry. Besides the financial control, the central Family Planning Department plays a dominant role in policy making and directing its implementation.

The Central Ministry thus issue directions but for execution the Centre is virtually dependent upon the States. In the States, family planning bureaus have been authorised within the Health Directorates for management of inputs, coordination and general supervision.

Further down, District Family Planning Bureaus play the key role in supervision and direction of field work which is carried out at service outlets.

Special Government organizations like the Defence Services, Railways etc., have internally administered family planning programmes and receive financial support from the Central Health Ministry for this work. Voluntary organizations, local bodies, public and private sector undertakings, plantations, mines etc., are encouraged to set up family planning services and provided with material and financial support.

### ORGANIZATION

The expanded programme envisaged the formation a network of a variety of units at various levels performing specified functions. There has been a steady progress to build up the organization but in the States the pace has not been uniform. In some the prospects continue to be poor. In rural areas there are problems that beset progress, particularly in the formation of subcentres . Amongst them are difficulties in the construction of clinics and residences for workers and non - availability of the alternative of

hired accommodation. Workers are mostly reluctant to be posted to remote rural areas and in many states there is a paucity of trained workers. The reasons of slow growth in urban areas are mostly those of bureaucratic inertia and a low level of bureaucratic commitment to the programme.

#### MANPOWER

The centre has stipulated that in the formation of the organization a variety of posts be created at various levels and has prescribed requisite qualifications for each category. As new elements of activity are added the creation of further necessary posts be permitted. Accordingly there has been a steady increase in the number of personnel working in the programme. However, it may be noted that many of the key positions remain unmanned. This is true of the Central Department and it becomes more marked in the States.

The reasons for the deficiency are not that there is lack of candidates with requisite qualifications but that the States do not create many of the required posts. Further the selection procedures are such that long delays occur in filling up the created posts.

The deficiencies are still more marked in rural areas. Recruitment of physicians and their utilization poses special problems. Their undergraduate training is heavily biased to clinical work and little to community health and so they lack both the skills and inclination to work in the field and be effective. As far as the para-professional groups are concerned their output falls far short of the numbers that are needed in the field. A besetting problem is the reluctance in all categories of personnel to work in rural areas under conditions which are often exacting.

### TRAINING

From the very inception of the programme training has received high priority. To handle the training requirements there are 5 Central Institutes, 44 Regional Training Centres and 16 Mobile Central Family Planning Units.

The central institutes provide leadership, guidance, and technical assistance to regional training centres to develop their capacity for systematic state wide training and also train the trainers of these centres. The institutes also train key personnel working at state and District levels and in establishments in Railways, Defence etc.

The regional training centres are the major training resource for the personnel in the programme. Many of them, however, are inadequately equipped and in many of them important staff positions have remained unoccupied. There is also the paradox that though a sizeable proportion of the field personnel remain untrained, these centres are not working to full capacity. It is reported that more than 50 % of the Training centres function at below 25 % of their capacity. The programme administrators in the field are reluctant to release personnel for the inservice training as its takes them off the tasks of achieving targets.

#### ACCEPTORS

In early years of the programme the contraceptive methods that were offered started with the rhythm method and went on to condoms, diaphragm, jelly, foam tablets and in 1956 sterilization. In 1965, IUCD was added after it had been clinically tested for over a year. In 1966, an exercise was done about the objective of reducing birth rates on a stipulated decline over the next decade and accordingly annual targets were made to secure contraceptive users. It was decided to vigorously promote a "cafeteria" of methods. These were

classified in three major categories: Sterilization with more emphasis on males, IUCD and conventionals - mainly condoms.

#### CHANGING PATTERN OF ACCEPTORS

There has been an increase of contraceptive use every year and the number of acceptors in the programme has risen. The totals, however, mask the fact that there is a change in the pattern of acceptance of the available methods. Whereas the number of acceptors of sterilization and IUCD have decreased the acceptors of Nirodh have continued to increase and pushed up the totals.

The implications of the changing mix of acceptors need some elaboration. Several sample studies have been done on the characteristics of acceptors of different methods. These show that the acceptors of sterilization are in the older age group, of higher parity and pre-dominantly rural. The sterilization may be in the male or female, but calculating the age of the wife at the time it is performed, it comes to the average of about 36 years. In the case of IUCD the average age of women is 31 years. Nirodh on the other hand is yet not very acceptable in rural communities and

is more popular with the younger and educated urban couples. The trend in the accept-or pattern indicates that the impact of programme is somewhat static in rural areas but is drawing more response in urban communities.

Another implication follows from the birth prevention value of each method and subsequent demographic impact. A change in the mix of methods changes the value of birth prevented by the programme.

The department of Family Planning uses the following relationship for purposes of converting acceptors to birth prevention by taking into account the age of acceptors.

- 1)1 Sterilization - 2.47 birth prevention over the life.
- 2)1 IUCD - 0.98 birth prevention over the life.
- 3)1 Conventional contraceptive couple year of protection - 0.15 birth preventions.

#### PROSPECTS AND NEEDS

The future prospects and needs must be considered in relation to decision - action generated at the aforementioned three "Power" structures : the target population, the policy administration group and the services.



The most critical factor is the individual couple, the final arbiter who accept or reject contraceptive use and choose the offered methods. The program policies and services in consequence must be geared to take cognisance of the consumer factor. A number of surveys on the characteristics of acceptors show the significance of intermediate variables like education, economic levels, employment situation, urbanization etc., But little work has been done to find out the reasons for non acceptance and the means to overcome them.

About 7% of the budget is utilized on mass education. All available media are used to carry information and messages to the population. Very little evaluation has been done on the relative merits of different media use. However, awareness is now well spread but the large gap between awareness and adoption continues to exist. It is contended that repatitive use of slogans like "Stop at 2 or 3 children" and high sale promotion of terminal methods have created an image of family planning as a programme that is mainly one of fertility limitation with terminal methods. It should have a deeper impact and spread over all parity cohorts if contraceptive use of promoted instead as a measure for

fertility regulation. As the benefits of fertility regulations are experienced the credibility of family planning would be established and limitation should be more easily acceptable.

It must be noted that the contraceptive services offered are not being accepted by eligible couples and the output perservice units in many instances is very small. So demand creation continues as the critical problem, not easily resolved. It is essential that the best skills in behavioural sciences are mobilized to find solutions.

Specific groups would require selective approaches and motivational techniques. There is also now a greater need for group and interpersonal communication well co-ordinated with use of mass media.

Some advocate the notion that one way of achieving higher output is by rapidly adding more inputs, i.e., more service outlets, more personnel, more buildings, more vehicles. All this would steeply raise expenditure. For

The programme needs new sense of purpose. With centralised planning and financing, the states tend to consider the programme primarily to concern to the centre

and tend to place it somewhat low in their own list of priorities. May be the situation could be improved if the centre confined itself to broad strategic planning and imposed the function of tactical planning on the states. The States would then face their individual problems, create a linkage between local needs and local resources and explore alternative approaches and delivery systems to propagate family planning. There are already examples of specific initiative taken in the states which have led to useful results. The United Planters Association of South - India has a pilot project of "no-birth" bonus for female employees in some tea estates.

There is great scope to improve the programme administration. Modern techniques and tools should be introduced at all management levels and key personnel trained in their use. There should be a more effective communication between the three power structures, i.e., policy makers, services and target population. The premier importance of the consumer should be recognized and policies and work should be oriented at that end. The Nirodh Marketing project has demonstrated how marketing techniques can appreciably raise contraceptive acceptance though it must be added that the project has

not been allowed the full use of marketing practices. A similar consumer oriented approach will greatly enhance the output of the programme. An important event occurred in 1971 when the Indian Parliament approved a bill on "Medical Termination of Pregnancy" which liberalised the indications for performance of legal abortions. This is bound to have an influence on family planning and opens up new opportunities to advance its promotion.

A very important step the Parliament has to take is to introduce a common civil code in the country. At present the Muslims have their own personal law which gives them a right to marry a second, or third, or fourth wife, when the first is living, while the other religious groups have adopted monogamy as the legal norm. It is true that, as a matter of fact, few Muslim men ever marry a second or a third wife. But the fear is there, particularly in the majority community, that this minority group is permitted polygamy while they are being forced to adopt family planning methods. It is also true, that studies have shown that the rate of acceptance of family planning methods is about the same in all the various religious groups. Still, in view of

the explosive situation caused by uncontrolled emotions in group behaviour, it is wisdom to get the minority groups to fall in line with the modern family norm of monogamy. Other Muslim countries have adopted monogamy, thus showing that the right to polygamy is not connected with religious sentiments.

~~SECRET~~

## AIM, SCOPE AND METHODOLOGY

### Aim and Scope

The present study is intended to bring at one place in the form of annotations all the significant literature that is available in the field of Indian population growth. Although the bibliography is selective in nature, an attempt has been made to cover all the aspects of Indian population growth.

I am confident that this bibliography will be helpful to all those who have some interest in the field of Indian population growth. Mainly research scholars in the field of Indian population growth will find it helpful.

The Part-I deals with definitions, causes and consequences of rapid population growth. The Part-II which is the main part of the present study consist of an annotated list of 250 periodical articles and contribution in composite books.

### Methodology

While starting with this task a general survey of the literature available in important libraries, viz., Maulana Azad Library at Aligarh, Indian Council of World Affairs Library, National Institute of Health and Family Planning Library at New Delhi was made.

A list of periodicals and books documented has been given in the last of Part-I.

#### Standard followed

As far as possible the Indian Standards recommended for bibliographical references (IS:2381-1963) have been followed.

After searching the literature entries were recorded on 7" x 5" cards. The entries in the bibliography contain abstracts giving essential information about the article documented.or

#### Arrangement

Efforts have been made to arrange the entries under the co-extensive subject headings, for this purpose a comprehensive list of subject heading was compiled. Although there is always scope for difference of opinion of any issue, the list of subject headings will generally be found following a logical helpful sequence.

Under the specific subject headings the entries have been made alphabetically by author. The entries are serially numbered.

## Index

The part-III of the bibliography contains Author and Title Index in alphabetical sequence. Each index guides to the specific entry or entries in the bibliography. Subject index has not been provided since the bibliography itself has been arranged alphabetically by subject headings and the subject Index would have been a duplication of the same sequence.

I hope these will be found very useful in making use of the bibliography.

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LIST OF PERIODICALS & BOOKS DOCUMENTED

AICC Economic Review	New Delhi	
American Journal of Sociology	Chicago	Bi.M
Artha Vijnana	Poona	Q
Asian Survey	Berkeley	M
Assam Information	Gauhati	M
Assam Tribune		
Bulletin of the Cultural Research Institute	India	Q
Bulletin of the International Statistical Institute		
Capital	Calcutta	W
Chemical & Engineering News	Washington	W
Commerce	Bombay	W
Contemporary	New Delhi	M
Current	Bombay	W
Demographia	Hungary	Q
Eastern Economist	New Delhi	W
Economic & Political Weekly	Bombay	W
Economic Development & Cultural change	Chicago	Q
Economic Weekly	Bombay	W
Economic Times		
Economia Internazionale	Genoa	Q

Eugenics Quarterly	Medison	Q
European Economic Review	Amsterdam	Q
Family Planning News	New Delhi	M
Farmer & Parliament	New Delhi	M
Financial express	Bombay	D
Frontier	Calcutta	W
Gandhi Marg	New Delhi	Q
Hindu	Madras	D
Illustrated Weekly	New Delhi	W
Imprint	Bombay	M
Indian & Foreign Review	New Delhi	S-M
Indian Economic Journal	Bombay	Q
Indian Express	New Delhi	D
Indian Finance	Calcutta	W
Indian Journal of Agricultural Economics	Bombay	Q
Indian Journal of Economics	Allahabad	Q
Indian Journal of Public Health	Calcutta	Q
Indian Journal of Social Work	Bombay	Q
Indian Sociological Bulletin	Ghaziabad	Q
Indian Worker	New Delhi	W
International Labour Review	Geneva	Bi-M
International Review of Modern Sociology	New Delhi	T-A

DS 1059

**Internation Review of History  
& Political Science**

<b>International Studies</b>	<b>New Delhi</b>	<b>Q</b>
<b>Janata</b>	<b>Bombay</b>	<b>W</b>
<b>Journal of Biological Sciences</b>	<b>Bombay</b>	<b>S-A</b>
<b>Journal of Development Planning</b>	<b>United Nations</b>	
<b>Journal of Family Welfare</b>	<b>Bombay</b>	<b>Q</b>
<b>Journal of Gujrat Research</b>	<b>India</b>	<b>Q</b>
<b>Journal of Institute of Economic Research</b>	<b>Dharwar</b>	<b>S-A</b>
<b>Journal of Social Issues</b>	<b>Ann Arbor (US)</b>	<b>Q</b>
<b>Kerala Labour &amp; Industries Review</b>	<b>Trivandrum</b>	<b>Q</b>
<b>Khadigram Udyog</b>	<b>Bombay</b>	<b>M</b>
<b>Krukshetra</b>	<b>New Delhi</b>	<b>M</b>
<b>Link</b>	<b>New Delhi</b>	<b>W</b>
<b>Maharashtra Medical Journal</b>		
<b>Mainstream</b>	<b>New Delhi</b>	<b>W</b>
<b>Management in Government</b>	<b>London</b>	<b>Q</b>
<b>Man in India</b>	<b>Ranchi</b>	<b>Q</b>
<b>Modern Review</b>	<b>Calcutta</b>	<b>M</b>
<b>Monthly Statistical Commentary on Indian Economic Conditions</b>	<b>New Delhi</b>	<b>M</b>
<b>National Herald</b>	<b>Lucknow</b>	<b>D</b>
<b>Organiser</b>	<b>New Delhi</b>	<b>W</b>

Pacific View Point	Wellington	S-A
People's Democracy		
Population	Paris	B1-M
Population Review	Madras	T-A
Population Studies	London	3 Times a Year
Religion & Society	Banglore	Q
Rural India	Bombay	M
Sarvodaya	Tanjore	M
Science	Washington	W
Science & Culture	Calcutta	M
Science to-day	Bombay	M
Scientific American		
Social Action	New Delhi	Q
Social Change	India	Four Monthly
Social Science		
Social Welfare	New Delhi	M
Southern Economist		
Statesman		
Sunday	Calcutta	W
Saurajya		W
The Ecologist	Wadebridge	M
Times of India	Delhi	D
Thought		
Yojana	New Delhi	F.N.

India's Population		
Population Crisis & the use		
of World Resources	The Hague	1964
Population Report Family		
Planning Progress		
Population Strategy in Asia	Bangkok	1974
World Population Growth &		
Response		

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ABBREVIATIONS USED

Bi-M	..	Bi-Monthly
D	..	Daily
FN	v.	Fortnightly
M	..	Monthly
Q	..	Quarterly
S-A	..	Semi annual
S-M	..	Semi Monthly
T-A	..	Twice annually
W	..	Weekly
Eastern Econ	..	Eastern Economist
EA	..	Economic Affairs
Econ and Pol Wkly	..	Economic and political weekly
ET	..	Economic Times
FP	v.	Farmer and Parliament
H	..	Hindu
Ill W	..	Illustrated weekly
Indian and foreign Rev	..	Indian and foreign Review
IE	..	Indian Express
Indian Fin	..	Indian Finance
Indian J of econ	..	Indian Journal of economics
Indian J of Soc wk	..	Indian Journal of Social work

Int Stud	..	International studies
J of Fam welf	..	Journal of family welfare
J of Instt of econ research	..	Journal of institute of economic research
MR	..	Modern Review
Pop Rev	..	Population Review
Religion and Soc	..	Religion and society
RI	..	Rural India
Sci and Cult	..	Science and Culture
SAM	..	Scientific American
Soc Action	..	Social Action
SOCH	..	Social change
Soc welfare	..	Social welfare
TI	..	Times of India
YIN	..	Young Indian

## **PART II**



### ANNOTATED BIBLIOGRAPHY

#### POPULATION, CENSUS, 1961.

1. ETINNE (Gilbert). 1961 Indian population census. Population. 19, 2; 1964; 309-24.

Summarises the Indian population census. Data on growth of population 1951-61; prospects; regional aspects (density and growth rate); sex ratio, age groups; rural population; active population and its distribution; castes and tribal population; unemployment and underemployment; birth control; population and economic development.

#### POPULATION, EDUCATION.

2. BALASUBRAMANIAN (NS). Population education in schools and colleges. Yojana. 23, 5; 1979 March 16; 28.

Population growth in a given period implies excess of births over deaths in the same period. India stands second among the top ten countries of the world having large population. Problem of population became severe after independence due to advancement in fields of medicine and surgery. The new population policy involves immediate measures and long term measures. Long term

measure is introduction of population education in schools and colleges. Small attractive slogans may be coined in regional languages and imparted to the children. Students should be provided with basic knowledge regarding dimensions of population. At college or university level students must be imparted with the need for population control. Though the numbers of students are less yet they will exert effective influence on the society and thus help in solving the problem of population.

#### POPULATION, ESTIMATES, 14TH CENTURY.

3. DUTTA (Jatindra Mohan). Population of India in 1360 A.D. Man in India. 51, 4; 1971 October - December; 334 - 63.

An attempt to estimate the population of India in last half of the 14th century, around 1360. The material and surrounding circumstances gathered here are insufficient and sometimes conflicting. Any estimate is at best tentative. The estimate of the population about 1360 is 190 million, with a 15% margin of error. During the next 250 years from 1360 to 1605 there was a decline in population, to about 110 million in 1605.

## POPULATION GROWTH.

4. AMONKER (RG). Demography : Case study of India.  
Internal review of Modern Sociology. 4, 2; 1974;  
 194-214.

A comprehensive overview of the demography of India is presented which examines 4 principle aspects of demography and is based on 4 sources of data : (1) Vital statistics registration, (2) Decennial censuses, (3) Sample surveys, (4) Government family planning publication.

India has an enormous population which is characterized by a high rate of growth and a high density. Projections of future growth, assuming a decline in fertility at various rates and a mortality at a specific rate, produce estimates of future population that are still higher. India has a high proportion of young population and a high youth dependency ratio, an imbalance in the sex ratio, a high proportion engaged in agriculture, a low per capita income, diversity of languages and religious groups, a low level of literacy and a predominantly rural population. The exceedingly rapid rate of growth in India is the result of extremely high fertility accompanied by declining mortality caused by modern medical practices.

5. BAJPAI (RG). Growth of Population in India.

Indian Economic Journal. 1954; 1-4.

Population growth in India 30 years before and 30 years after 1921 has been considered, as well as the per capita formation and the necessity of family planning.

6. BANWARI LAL & PILLAI (CS). India and world population year. Yojana. 18, 12; 1974 July 15; 10 - 12.

India is among those countries where population has been growing at a rate higher than the global average. With the birth rate remaining more or less unaffected and the death rate declining faster, India and other countries of the world similarly placed, are faced with the problem of population growth which has resulted in a certain amount of imbalance between population and the means of subsistence. This phase in the life of a nation is often described by demographers as the second stage of demographic transition. The problem needs to be viewed not only from the national but also from the international angle as deteriorating condition of living in a large number of less developed countries should cause concern and anxiety to the developed nations as well. In India, the occasion, World Population Year, will be marked by the release of a special

stamp by the posts and telegraphs department.

7. FOUR MISCONCEPTIONS about population explosion.

Organiser. 18, 47; 1965 July 4; 17.

There are too many misconceptions about population growth causing a population explosion etc.

COMMENTARY, the prestigious American monthly, in its Nov. 1964 issue published an article on the subject of 'Population Myth', by Dennis H. Wrong. He makes clear that the problem is neither urgent nor confined to India and China. First misconception about the population explosion is that it poses a problem only to the economically under developed countries. Another misconception concerning population explosion is that it has resulted from a rise in the birth rate in the countries of rapid growth. Third is failure of adoption of birth control methods to balance the effects of death control. Another misconception is that the balance of power involved politics is likely to be altered by the rapid growth in the population of the under developed world.

8. GHOSH (SN). Population explosion. TI. 1970 Sept. 27; 8 : 3-5.

In India due to the increasing gap between the birth rate and the death rate the population has

increased from 251.4 million in 1951 to 554 million. It is a question of feeding an additional 13 million mouth every year. The problem of educating them and finding shelter and jobs for the unwanted millions has also to be taken into account. To make economic development yield tangible benefits for the ordinary people, it is necessary that the birth rate is brought down substantially as early as possible.

9. INDIA HAS more than 15% of world population.

Indian Worker. 18, 25; 1970 March 23; 2.

The worlds population reached a total of 3,483 million in mid 1968, according to the United Nations Demographic Year book. The article contains a table showing population of different nation in millions. India has more than 15% of the world population and stands at the second place.

10. INDIA'S MOST dangerous myth 'Population explosion'.

Organiser. 18, 46; 1965 June 27; 14.

"Economic survey", the weekly economic feature of the Hindustan Standard, Calcutta, carried recently (May 24) an article by its economic columnist 'Yama', bearing the caption "India's Most dangerous Myth". Yama wrote India's most dangerous myth today is that her population is exploding.

India's population problem is not a mere demographic problem. It is as well an economic and a political problem. Facts and figures show that the view that India is over populated is merely a fanciful concept of our planners and administrators.

11. KESHWANI (GH). Are we too many? TI, 1980 March 9; 6 : 1-5.

The growth of population has been compared to fission in an atom bomb. Author reviews the theory of the growth of population and highlights the decisive influence that it exercises on national prosperity. When the population grows abnormally and at some stage no land is available for additional men, the situation could be even worse than that depicted by the arithmetical progression. This is so in some areas of India. In India, currently, the birth rate is estimated at 33 per thousand and death rate at 14 giving a net growth rate of population of 1.9 % per year. Increase in national product was also completely swallowed up by the increasing population giving an annual increase percapita over the period 1960 - 76, of 1.2 % only. Future technology will surely have an effect on population.

12. NANDA KUMAR (Prama). Population explosion.

Swarajya. 10, 52; 1966 June 25; 13 - 14.

Kingley Martin in an article in the New Statesman says that the rate of growth of population in India is about 2.4 % a year, and at this rate the population will be doubled in thirty years.

This is the explosion, and this should stop. The check explosion government thinks that the proper thing is to start a massive propaganda campaign to popularise birth control measures. But this is done with small discretion and less imagination. As the economic condition improves, families tend to become small. The stress should be to improve the living conditions of the people, and not first arbitrarily to make people limit their families so that their economic conditions may improve.

13. POPULATION BOMB. Statesman. 1972 October 29; 8:2.

The centenary seminar of the Indian census in New Delhi has been understandably concerned, with the explosion of population likely to occur during the remaining three decades of this century. According to Dr. V.K.R.V. Rao the rate of growth had reached a peak in 1969-71. Due to many facilities provided in villages the death rate is



bound to decrease drastically. The rate of infant mortality is always the first to show a notable response to improved conditions. The family planning programmes have made impact on birth rates. With population at its present level, even a constant rate of growth will rapidly present ever most serious problems of over crowding.

14. POPULATION INCREASE. Farmer and parliament. 8,3; 1973 March; 5.

The population of India has been increasing at a rapid pace. In India the main reason for increase in population is the improvement in the Medical facilities provided and health measures taken after independence. While efforts to check the undue increase in population must continue, it must be stated that India has vast resources and if exploited, there can be no difficulty in feeding even a population of hundred crores. For the welfare of the people of this great country, the irrigation facilities must be developed at a rapid pace and much larger financial resources than as proposed in the Approach to the Fifth Five Year Plan, should be provided for irrigation.

15. PROBLEM OF population explosion. Contemporary.  
21, 12; 1977 December ; 7-8.

During the last fifty years the problem of population explosion has become very acute in the developing countries. The abnormal population growth will make the food problem more difficult and also creates difficulties in education. The rapid population growth adversely affects different spheres of public life. These difficulties arise due to the abnormal economic and cultural backwardness from colonial exploitation for ages. It is not the shortage of food resources of the world and the unusual population growth which are causing starvation of hundreds of millions in the newly freestates, but the backward social structures and unjust and unscientific mode of production and distribution of the food productions coupled with the continuous economic exploitation by the developed capitalist countries are mainly responsible for the untold miseries of the vast population of the present day world.

16. SINHA (RK). Explosive growth of pupulation in India. AICC Economic Review. 9; 1957; 17-19.

Deals with some of the results of the over population and its evils and suggests remedies to improve the conditions by cutting down the population growth.

17. SUBRAMANIAM SWAMI. Myth of population explosion.

Sunday. 8,12; 1980 September 28; 21.

In this article author says that over population is not such a problem, although it is not a good thing. But by merely preventing the birth, problem cannot be solved, for this economic condition of the country should be raised.

18. TAEUBER (Irene). Demographic transition in Asian regions. In Population strategy in Asia. 1974.

p 138

The major questions of demographic transition in south Asia pertain to India. Questions concerning the economic and social transformations, the family planning programmes and activities and their separate or associated impacts on the age at marriage or remarriage and the child bearing of the married cannot be resolved in analysis for all India. The country is continental in area and massive in population. These are integral relations between the economic and social development and demographic modernization. Rising populations slow, if they do not preclude economic and social developments. But economic and social developments are essential to creating the milieu and the motivations that lead to planned and smaller families. Movements to the

solution of the life problems of adults in the present generation seem to be essential to solving the problems of population growth in the next generation.

#### AGE FACTOR.

19. BALASUBRAMANIAN (NS). Dependency load in India. Khadi Gramodyog. 12, 8; 1966 May; 563-66.

Not only in the case of the size of population but also in its age structure, India is in an unfavourable position. More than one third of our population depends on the earnings of the rest. This heavy dependency load, compared to that in other countries, is further inflated owing to the considerably large working force which is either unemployed, or under employed, or disguisedly unemployed. Enormous population growth of India is mainly the result of an unprecedented decline in the mortality rate unaccompanied by a corresponding decline in the fertility rate. The result of the population growth in India is that there is an increase in the density of population per kilometer from 129 to 134 between the two census periods (1951 and 1961). Between these years the net quantity of cereals available increased from 43.1 to 63.0 million tones, where as the percapita

availability of the same increased only by 15%. Thus there is an immediate need to reduce the total population to a considerable extent and thus to bring about a drastic change in the structure of population.

#### POPULATION GROWTH and AGRICULTURAL PRODUCTION.

20. BURKI (Shahid Javed) and SHAHID YUSUF. Population: Food fertility link. Indian Fin. 97, 5; 1976 January 31; 94 - 98.

Sufficient information has been gathered about the relationship between various social, economic, sociological, and physiological factors to suggest a way in which food can be seen to influence fertility. By increasing the food out put and the food consumption of higher fertility groups, we should be able to produce a decline in their birth rate. This appears to be the most appropriate way of solving the two problems of food and fertility.

21. CENSUS : Grim picture. Capital. 166, 4160; 1971 April 22; 704 - 05.

The provisional population figures of India as revealed by the 1971 census operations show that

the net addition between 1961 and 1971 was a little over 107 million, recording an overall decennial growth rate of 24.57 %. The census commissioner has clearly said that in the absence of reliable and up to date birth and death rates, it is not possible to make correct assessment of the impact of family planning programmes.

22. GINDERTAEL (Jean - Michel Van). Population and nutrition in the year 2000. Indian and Foreign Rev. 5, 16; 1968 June 1 : 15 - 16.

The world's population has been increasing steadily for centuries, but the growth is accelerating. Only a few privileged countries enjoy an abundant or indeed over abundant food supply. In India, it is hard to imagine the gigantic investments needed to create a viable economy that would yield adequate reinvestments in the form of housing, hospitals and roads for a population that has doubled in size. Yet even if all the aid now available from the highly developed nations were devoted to India alone, it would still not be enough to meet present needs. The only way out is advancement in science, for it will help us to win this peculiar race against time.

23. KOHLI (KL). Population pressures and economic development in India. AICC Econ Rev. 17, 1; 1965 June 15; 31 - 33.

High rate of population growth and low agricultural production are the most important problems with which our country is faced. There is shortage of food in country due to rapidly growing population; inspite of three fourths of our labour force employed in agriculture. A most important result of the rapid population growth is the effect it has on the age composition of the population. The distribution and composition of population is not conducive to the process of rapid economic development. The primary responsibility for creating favourable climate for productivity and successfully implementing the latest techniques thereof, has to be borne by management.

24. KUMAR (P). Population growth and food availability in India. Rural India. 31, 2; 1968 February; 71 - 78.

Food is the prime - mover of life. It will be quixotic to aspire for self sustaining economy, devoid of self - sufficiency in food. The paradox of food - paucity, must go lock stock and barrel

from our 'food - grains - oriented - economy'. There is no economic rationale for food imports. India should not guard the mummy of the Malthusian theory. All this requires a four - fold attack. Firstly, by the control of population; secondly, by efficient methods of production; thirdly, by changed pattern of production and fourthly by equitable distribution.

25. NARENDRA SINGH. Too many people? Frontier.

1975 July 12; 10 - 11.

Generally it is told that food problem in India is due to over population. But, there is no 'over population' in India giving rise to the food problem, nor a large population causing poverty. Instead, the fact is that large numbers of people in India are poor and suffer from lack of food and other problems as a consequence of socio - economic disparities, sustained and promoted by the profit motivated social system of exploitation of the masses. The problems of feeding or of economic poverty of the masses have deep socio economic and political roots. They cannot be solved by technological or management or any other elite sponsored revolution. They



can be solved only through a profound qualitative transformation of the socio - economic and political system.

26. MEHER (MR). India's population versus food production. Modern Review. 124, 8 ; 1969 August; 606 - 08.

It has been the generally accepted view that economic progress in India depends on an intensive drive for family planning. But lately there has also been a point of view that rising population is by itself a good thing. Economist Dr. George C. Zaiden writes, "The potential for economic growth is much greater than the potential for population growth. With the use of new high yielding food grains, chemical fertilisers, progressive mechanisation and modern irrigation techniques, India can expect to be self sufficient in food supply by 1971. Success in the achievement of food grains target is principally linked with the success of high yielding varieties and multiple cropping programmes.

27. POPULATION GROWTH and food supply. EP. 10, 6;  
1975 June ; 5 - 6.

Population growth has caused considerable concern to economists and social workers. Though India is doing much to increase her productions much more can be done. While in India the country can produce enough food for the increasing population the nation has to be alert and progressive in exploiting various resources to produce food. Complacency should not be allowed to creep in. Aggressive approach to the food problems must be maintained with vigour and energy and if that is done, there should be no cause for undue anxiety for the future.

28. PRABHUSWAMY (N). Two revolutions. Kurukshetra.  
(Annual Number). 1969 October; 59 - 61.

The agricultural revolution that has started in India is not the ultimate solution to the food population problem faced by India. Therefore, India is currently engaged in organising, equipping and financing a big revolution in the form of family planning in order to control the

rapid growth of population. In India the population growth rate is about 2.5 % per annum. The needs of this rising population would raise our food requirements to 112 million tons by 1971 and 127 million by 1976. The nation has to face serious economic problems. These problems can only be solved by a revolutionary programme population control.

29. RAMALINGASWAMI (V). Paediatrics nutrition and population growth. SOCH. 1, 3; 1971 December; 23 - 27.

The gap between production and reproduction is widening. It is the sociologists who can provide the crucial information that we need to develop a comprehensive strategy for fertility control. Economic consideration of inputs and outputs, Gross National Product, etc. are often highlighted in family planning programmes. Family planning as a population control programme purely for economic reasons is less likely to succeed in our environmental context to day than family planning as an essential ingredient of health programmes

oriented towards meeting the felt needs of the community. Nutrition programmes can be important motivating factors for family planning programmes by combining fertility control services with measures to raise the well beings of mother and children. Admittedly, the impact of better nutrition services on fertility behaviour and on productivity is imprecise.

30. SAHAY (S). Race between population and food production. Statesman, 1970 May 27; 6 : 4.
- The Rockefeller Foundation report analysed India's agricultural problems and performance and poses the question how long will food production continue to run ahead of population? Some experts believe the best the country can is that the population levels off around 750 million by the year 2000; others hold that the population is likely to double by then. This implies that the country must achieve a much greater annual out put of food and also improve its quality. This, says the report will require every bit of new technology that scientists can develop and farmers can use. This will also require firm policy decision, particularly on food policies.

31. SEN (SR). Population and agricultural development. Yojana. 10, 3; 1968; 17 - 19.

According to author, population increase has no definite relationship with food production. A developing society with help of existing technical knowledge can meet the challenge of food scarcity and increase production 8 times.

32. SINHA (JN). If population grows unchecked success on food front will be temporary. Yojana. 22, 18; 1968; 29-33.

Article mentions that with the enormous leap in agriculture envisaged in the next few years, the race between population and food production may be nearly won by the end of fourth plan. But unless the pace of birth control is accelerated the victory may be a passing event.

33. SUBRAMANIAM (SR) and MEENAKSHI SUNDARAM (V). Population and food supply in India. Rural India. 31, 2; 1968 February.

The paper is an attempt to bring to light the gravity of the food problem in the light of the velocity of increase of population. The quadratic

fit for the population growth and the linear fit for cereals supply do confirm the Malthusian hypothesis postulated nearly a century ago regarding the expansion of human species and subsistence. The analysis of balance sheet of demand and for the supply of cereals indicates a numerical surplus over and above the requirement of the expanding population by 1980 - 81. But the analysis of the data on velocity of population increase and the velocity of increase in surplus of cereals dampens the apparent numerical increase in a cereal production. The numerical surplus is neutralised by the differential rates of velocity of population increase and velocity of increase in cereal surplus.

34. TRIPATHI (RP). Growth of population and agriculture in India. AICC econ Rev. 18, 11; 1966 December 15; 15 - 28.

India presents a bewildering picture of a large community subsisting on an extremely low level of living and at the same time its population growing at a relatively rapid rate. Reasons for population

growth are - universality of marriage, early marriages, absence of any effective wide spread family planning among the rural population. There are two determinants of population growth - birth and death rates. Food for its teeming population is India's biggest problem. Imbalance between the development of economy and the growth of population creates many problems. All fertility control methods may be grouped under four categories (1) abstinence (2) contraception (3) Sterilisation (4) abortion.

#### POPULATION GROWTH and BIRTH CONTROL.

35. SEAGRAVE (JR). Note on sex pre - determination and population growth. Population Rev. 11, 1; 1967 January; 44 - 46.

The purpose of this note is to examine the demographic and other consequences of what seems to be neglected medical possibility - the pre determination of children's sex - with special reference to India. The typical Indian wants at least two sons, to care for him and to cremate him, then clearly the certainty of two sons, as his first two

children, would result in greater acceptance and use of contraceptives thereafter i.e., sex predetermination would make family planning 'bite'. There are two distinct mechanisms leading to a lower birth rate, one immediate, one after a lag of generation. In the extreme cases, no girls would be born, resulting in a fall of birth rate from 40 to 2.5 per thousand, and a near cessation of population growth.

#### POPULATION GROWTH and ECONOMIC DEVELOPMENT

36. AIYER (Krishna S). Population growth and economic development. Mainstream. 9, 44; 1971 July 3; 31 - 33.

Even from the days of Plato the effect of population on human welfare engaged the attention of political scientists and economists. Four aspects of population in less developed areas are retarding economic development : the relatively high rate of population growth, unfavourable age structure, unbalanced population distribution and the comparatively large proportion of unskilled manpower. All are amenable to control provided the



ways in which they hamper efforts to raise levels of living are fully understood, appropriate policies are formulated, and necessary programmes put into operation.

37. CASSEN (Robert). Development and population. Economic and Political weekly (Special Number). 11, 31 - 33; 1976 August; 1173 - 86.

This article draws on recent p research to examine the inter relationships between development and population growth in India. The first part emphasises the role of distributive development in reducing mortality and fertility, the second looks at impact of population on that development. Least explored relationship is that between population growth and the productivity of capital in productive sectors.

38. CLARK (Colin). Population and economic growth. Indian Fin. 83, 2 ; 1969 January 11; 35 - 38. Population growth throughout the developing world, As in India, did not begin until quite recently. It was brought about, not by any increase in fertility but by improvements in medicine and reduced mortality. It has been shown by economic theory and confirmed in fact by international

comparisons that population growth increases the proportion of national product saved, because it increases the proportion of young men, who are the most active savers, in the population, and keeps the proportion of old men low. Population growth not only increases savings but also makes possible the more economic use of capital, by spreading the overhead cost of large indivisible items such as the transport system over a large number of people.

39. CLARK (Coling G). More people, more dynamism.

Yojana. 18, 12 ; 1974 July 15; 37 - 41.

Population is generally taken as hurdle in the way of economic development. Indian production per head of population has been advancing at an average rate of 1.5 % per year, or at three times the highest rate which the most optimistic Indian economists were willing to estimate in 1957. Production per man is observed to grow more rapidly when the rate of growth of the industrial labour force is high. An objection to population growth is that the higher rates of population growth will reduce the savings, while at the same time creating a large demand for capital.

40. FLORIR (George A). Population and prosperity rise and fall together. Organiser. 19, 40; 1966 May 22; 13.

In India and elsewhere in Asia, poverty and unemployment at least provide a superficial - though obviously erroneous - justification for the crusaders of birth prevention. The Indian family planning association always tried to convey the impression that the reduction of the birth rate would automatically bring more food, greater welfare, general full employment and a good time for all. For them it was an already established fact that birth control is the panacea to all political and social ills.

41. GANGULI (BN). Contradiction between population increase and economic growth. Yojana. 18, 12; 1974 July 15; 13 - 15.

Population increase may not only hamper economic growth, but actually promote it, if the population capacity of a region or a country is below the level of optimum use of its natural resources. In this case, growth is retarded by the scarcity of the complementary resource, labour.

If population were unduly dense, average productivity would fall. The contradiction, of which we hear, now is different from what has been traditionally recognised so far. It is not simply one between population pressure and natural resources. The important variable is the quality of the population, not merely the number of human beings. The other important variable, growth, is a function of two variables:

- (1) Production of material goods and services;
- (2) Per capita availability of social services.

The need for population control in many countries is undeniable for reasons of individual and social welfare.

42. GANGULI (BN). How population growth retards economic progress. TI. 1970 January 26; IV : 1.
- Rapid growth of population retards the economic progress. When the population tends to increase at a rate approximating the rate of increase of the per capita national income, levels of living, would tend to show little improvement and in some cases, actual decline. A developing country should aim at "a faster rate of the reduction of the number of people living below

an acceptable minimum standard than the rate of growth in aggregate income.

43. GUPTA (Parthasarathi). Population growth and capital formation. Kurukshetra. 19, 7; 1970 April; 13-14. An increase in population exerts two conflicting influences on the rate of capital formation. On the one hand, growth of population may be a serious obstacle to capital formation unless it happens to coincide with the development of opportunities for employment. If employment opportunities are not expanded, the rate of saving will fall with every increase in population. If on the other hand, employment potential is increased resources will be set free for savings and investment as a result of absorption into employment of those who would otherwise have remained unemployed. An increase in population will be a serious impediment to capital formation. The net effect of population on capital formation will be influenced not only by the marginal propensity to consume but also by the marginal propensity to invest. Thus, the growth of population is functionally related to the rate of capital formation through

(a) expansion of employment potential (b) the marginal propensity to consume (c) the marginal propensity to invest.

44. HOOVER (EM). Economic consequences of population growth. Indian Journal of Public health. 12, 1; 1968; 17 - 22.

Discusses whether population growth is an aid or a hindrance to human improvement after taking into account various meaning of both economic consequences and population growth.

45. HOONER (Edgar M). Economic consequences of population growth. Indian J Econ. 47, 1; 1966 July ; 1 - 11.

Economic consequences is the effect of population growth upon economic growth in the simple sense of arise in the per capita level of real income. The economic effectiveness and the consumption and investment demands of a population are importantly affected by the size, the rate of growth, and the age composition of that population. Faster growth means more consumers per worker, or a greater 'dependency burden'. Slower growth with reduced fertility, and a higher ratio of produces to

consumers, suggests more favourable conditions for increasing per capita out put and income.

46. HUSAIN (IZ). Population and economic development. Indian Journal of economics. 44, 171; 1963; 23-40.

Seven hypothesis regarding correlations between crude birth, death and natural increase rates and socio economic variables, by comparing 1959 statistics of nineteen countries representing high, low and intermediate ranges of per capita income have been examined in this study, with special reference to India.

47. INDIAN INSTITUTE OF PUBLIC OPINION. Population and economic growth. Monthly Statistical Commentary on Indian Economic conditions. 5, 5; 1963; 35 - 38.

Summarizes and presents supporting statistics for paper. The implications of population trends and food supplies and requirements for the Far east with special reference to India, prepared by P.V. Sukhatme for the Asian Population Conference of ECAFE, New Delhi, Dec. 10, 1963.

48. KELLEY (AC). Population growth, the dependency rate, and the pace of economic development.

Population Studies. 27, 3; 405 - 14.

It is frequently hypothesized that there is an inverse relationship between the rate of aggregate savings and the dependency rate. It can be shown, however, that under plausible assumption, the dependency rate may be positively associated with the aggregate rate of saving. As the overall dependency rate changes, so does its composition as between the proportion of the dependent population distributed between its two components: The pre-work force years and the post-work force years. If we assume the dissaving rate in each of these components is different, then decreases in the dependency rate may under certain conditions be associated with decreases in the economy wide saving rate.

49. KRISHNAMURTI (K). Economic development and population growth in low income countries :

Empirical study for India. Economic Development and cultural change. 15,1; 1966; 70-75.

An attempt to estimate the impact of economic development as reflected in per capita real



income and other related variables is studied. Birth and death rates in India for the period 1922 - 60 are included in study.

50. KUZNETS (Simon). Population trends and modern economic growth towards a historical perspective. Soc. Action. 23, 4 ; 1973 October - December; 372 - 91.

The distinctive characteristics of modern economic growth, rapid changes in production structure, urbanisation and vast internal migration, shifts in conditions of participation in economic activity and the associated increase of emphasis on education and testable criteria of individual performance - had a profound influence on fertility, family formation, and the life cycle of learning, work, and retirement in the developed countries. This analysis reveals that the coherence between the opportunities and requirements of economic growth and the response of the population trends was not an easy or smooth process but characterised by disparities in adjustment gradual spread, and the indirect influence of institutional and

ideological variables. Acknowledging the differences in the specific implications of the population adjustment problems between the developed and less developed countries, like India, the article stresses the importance of the transformation of social and economic institutions for the reduction of high rates of population growth.

51. LEIBENSTEIN (Harvey). Population growth and economic development. Economic development and cultural change. 8, 1; 1959; 101 - 05.  
Reviews Ansley J Coale and Edgas, M.H. paper, Population growth Economic development in low income countries like India. Significance of reducing fertility is emphasised to increase economic development.
52. LORIMER (Frank). Dynamic aspect of the relation of population to economic development. Bulletin of the International Statistical Institute. 33, 4; 1954; 243 - 54.  
The dynamics of age structures in a transisional situation with initially high levels of mortality,

including the construction of model population departing from the level of the Indian life table of 1921 - 1931 and with two hypothesis as to fertility.

53. MENTA (Asoka). Economic revolution of our time. Population Rev. 11, 1; 1967 January; 17 - 23.

The economic revolution of our time is concerned with (a) how to realise a higher expectancy of human life (b) How to attain a greater productivity of human labour (c) how to achieve a greater amount of creative leisure for all human beings. The first is biological concept, the second is techno industrial concept while the third is a cultural concept. With the biological concept, associated aim is the achievement of lower birth rates, lower death rates and lower infant mortality rates. For over populated countries like India, population control through contraception has to be organised on a massive scale if a further worsening of the condition has to be prevented.

54. MEHTA (Fredie A). Economic implications of demographic growth in India. Economia Internazionale. 8, 4; 1955; 810 - 27.

Probable development in the next three decades has been analysed covering demographic characteristics, rates of capita formation, rate of growth of food supplies, rates of growth of population and available employment opportunities, and policy on fertility control.

55. MUKHERJEE (Sujit K). Population growth and economic development in India. Mod Rev. 124, 3; 1969 March; 180 - 82.

Population growth affects economic development in a number of ways and economic development in its turn exerts due influence on population growth. Population growth has its favourable effects on economic development by raising the per capita income and hence the standard of living at a high level causes both the birth rate and death rate to fall there by making the growth rate of population stable. The impact of population growth on our economic development already presents a very pessimistic picture.

The per capita income which is considered to be a criterion of economic development and determinant of standard of living is increasing at a miserably low rate. The growth of population when compared to the growth of food grains production gives us a more pessimistic picture. While the growth rate of population is increasing day by day. So per capita allocation of food is decreasing gradually.

56. NARAYANA (IL). Economic consequences of population explosion. *Economic Affairs*; 1967; 12,5 ; 221-228.

Reviews patterns of population growth in under developed countries with special reference to India and the related problems of food production, man power planning, and fertility control.

57. NEWMAN (Peter). Population pressure and economic growth : operational treatment. Journal of Development Planning United Nations. 2; 1970 ; 31 - 57.

This paper describes methods of measuring the effect of population pressure upon economic growth. But does also suggest some aspects of

the inter-relations between economic development and population growth.

58. OOMMEN (MA). Population explosion in India: Its economic implications. Religion and Soc. 16, 1 ; 1969 March ; 43 - 48.

Population problem, in a sense, is the crux of India's economic problem. The size and quality of the population, as well as the rate at which population grows, influence economic development. The purpose of this article is to spotlight the economic implication of the rapidly growing population in India.

59. PAKRANI (Kanti). Population and development plans. Sci and Cult. 42, 1 ; 1976 January; 10 - 13.

There is always a reciprocal relation between population and society, i.e., that the social structure of a country influences population changes as well as being affected by them. In most of the developing countries, like India, birth rates have remained high while death rates are declining noticeably. Due to high birth

rates the developing countries are experiencing 'excessive' population pressure which impedes greatly progress of national development plans. Though the tremendous impact of the rapid population growth on national plans for rural or urban developments has duly been recognised, yet it is noticed that the development planning and population planning continued to be separate spheres in many countries. A close co-ordination has yet to be achieved between population planning and planning for health services, education, housing, employment, industry, agriculture, trade etc.

60. PATEL (NT). Rising population and economy. ET. 1977 March 12; 7 : 3.

This article examines the impact of increasing population on the following three aspects of the economy in India. (a) food supply, (b) employment, (c) value of per capita net national product.

It is found that government has taken efforts to increase production and employment but the increasing population has nullified the efforts to a great extent. Family planning programme should be implemented more vigorously.

61. PRAKASH (Som). Demographic changes and economic growth in India : Study of some basic issues in the Indian economy since independence. Dissertation abstracts. 20, 4; 1959; 1204- 05. The present study concerns itself with the basic problem of India's poverty in view of its considerable present population and the promise of substantial gains that the coming decades hold in latter respect. A twofold task of this study is to specify the conditions of economic growth and to examine critically adopted and proposed policy measures which would seem to contribute to the chief goal of lifting real per capital incomes.
62. RAJKUMAR (R). Impact of population of India's economic development. AICC Economic Review. 19, 8; 1967; 17-22. Author shows how the population explosion in India has had its effects in minimising the considerable economic growth in the country and that is why the last three plan periods have not achieved as much as they wanted to. By economic growth is meant not only increase in national income but also an increase in per capita income of an economy.



63. RAO (SK). Population growth and economic development : Counter argument. Econ and Political weekly (Special Number). 11,31-32; 1976 August; 1149-58.

This paper argues that the often repeated emphasis on 'population control' as a means of generating economic growth makes sense only if one can postulate that the number of 'births prevented is a function of the expenditure on birth control.' The argument that control of population would result in economic benefits, involves making the following statements.

(a) As a prevented birth now will not affect the size of the labour force until after 15 years or so, there will be no immediate reduction in the size of the labour force. Therefore, total GDP should not fall and per capita GDP should rise in the first 15 years at least. (b) A rise in per capita product should enable a rise in per capita saving leading to a higher rate of investment. (c) Any fall in the size of the labour force in the period after 15 years may not lead to a reduction in total GDP, as the savings meanwhile would have resulted in higher capital per head, so that output per man should rise.

64. RAU (BRK). Adverse effect of population explosion on economic development. Southern Econ. 18, 20; 1980 February 15; 9 - 11.

According to the current projections, India's population will reach a staggering one billion by 2000 A.D, that is, if the population growth rate is allowed to continue at the present rate. When populations grow faster, more resources go for demographic investment required to feed them, at the cost of developmental investments. Rapid growth of population eats away capital and other resources for indirect uses. The author points out that if the undesirable consequences of such an explosion is to be avoided, the government should streamline its family planning measures in order to bring down the birth rate to an acceptable level.

65. RAU (BRK). Some economic aspects of population problem in India. AICC econ Rev. 17,3 ; 1965 July 15 ; 35 - 40.

The relation between the size of the population and the level of national dividend are important in economics. A continuous effort to maintain a harmonious relationship between the population and the national income demands action to control the population and regulate the national

income. Birth rate in India is responsible for low per capita income and for the low standard of living. Of all the problems created by population growth, food scarcity is the severest. While it is becoming difficult to bring down the annual growth rate of the population, it is still more difficult to increase the growth rate of the economy in India.

66. RUSSELL (WMS). Population and inflation.

Ecologist. 1, 8 ; 1971 February; 4-8.

Economists generally conceive of population growth as a good thing. At the same time they are unanimously in their condemnation of inflation. Here Dr. Russell shows that they can't have it both ways.

67. SATHYAPRAKASAM (M). Economic progress and increase of population. MR. 131, 1 ; 1972 July; 70-71.

Today developing countries like India are facing the menace of over population. The end and aim of economic planning is to revolutionise the existing standard of living of the common man.

Both the national income and per capita income are generally recognised as an index of economic progress. It is admitted that as a result of the implementation of Five Year Plans a considerable increase in national production has been registered bringing about thereby a slight rise in national income. But this increase in national wealth has failed to produce any noticable effect on the per capita income. It is estimated that the food production of our country in a year is only 90 crores of tons and it is inadequate for the present population.

68. SEN (SN). Trends in population, food and economic development. Sci and Cult. 33, 12 ; 1967 December; 495 - 99.

The problems of the economic development in general and of food in particular posed by the current population explosion need hardly be over estimated. This demographic acceleration has been due to a sudden and continued drop in mortality in the under developed countries like India. The various factors responsible for this rise in life expectancy, are basic economic improvements, efficient distribution of food, and public health improvement

69. SETHI (JD). Significance of some population theories as applied to India. Indian Economic Journal. 1954; 152 - 163.

Theories of population growth and their relevance for planning economic development are considered. Marxian, Malthusian and Keynesian theories and studies along with their significance in estimating future population size in India.

70. SHAH (SL). Population factors and economic development in India. Eastern Econ. 51, 17 ; 1968 October 25 ; 793 - 94.

Our country is an agricultural country with high density of population. Population explosion is a great hinderance in economic development. Population explosion means high birth rate but rapid fall in death rates. Drastic reduction in mortality has taken place without marked economic development and without much change in the traditional birth rates. Economic growth in the last three plans has been very low. In Western countries population grew as a consequence of economic development, but such is not a case

with out country. Reduction in fertility is the most basic approach to economic development in our country. Our objective therefore should be to have a structurally favourable combination of low death rates and low birth rates at high per capita incomes.

71. SHENOY (BR). Impact of population on India's economic growth. Capital. 1973 Annual; 27 - 32. It is unfortunate that popular writers as well as demographers should generally skip the basic issues altogether, and right way proceed to formulate prescriptions for population control as remedy to Indian poverty. They take it for granted that population has produced poverty. The untenability of the argument of Indian poverty being related to population pressures gets reinforced when we examine the, the impact of population on per capita out put. There are handicaps in Indian agriculture which are hurdles in the way of economic growth.

72. SINHA (JN). Population growth and balance in economic development. Economic development and cultural change. 7, 3; 1959; 206 - 15.  
Presents a model for India giving growth and income projections with two integrated sectors - the agricultural and the non agricultural under two alternative assumption of rate of population growth. Discusses the employment implications and the balance between demand and supply and terms of trade.
73. SINHA (JN). What price population growth? Journal of Institute of Economic Research. 1,1 ; 1966 ; 6 - 14.  
The study outlines implications of population growth in India within a limited time space of 15 to 20 years. Sections include : Trends in population growth and vital rates ; prospective changes in vital rates and population projection; alternative rates of population growth and required plan efforts; population growth, savings and relative consumption levels.

74. SPENGLER (Joseph J). Economics of population growth. In Population crisis and the use of world resources. 1964; 73.

This article has to do both with the economic adjustments that a population makes when it is growing and with the manner in which a population's reproductive behaviour may respond to economic changes. It is made up of five parts which relate to three somewhat distinct problems. The first two parts deal with supply aspect of population growth. Part III deals with demand for population. Part IV & V deal with the economic policy implications of what has been set down in the earlier parts.

75. STEPHEN (Euke). Population growth and economic growth. Public Interest. 32; 1973; 86 - 96.

Population growth seems to be declining and this has predictable economic and social consequences. Although it is believed that population growth is some how necessary to make business profitable, extra population does not necessarily mean more customers perfirm in the long run. Other factors influence business far more than population growth



or decline, i.e., technological advances, etc.

If ZPG would be good for the economy, not harmful to business, and beneficial for the environment, it is possible its attainment would become a national objective.

76. ZAIDEN (George C). Population growth and economic development. Eastern Econ. 52, 10; 1969 March 7; 528 - 33.

Many people have been alarmed by the population explosion and some writers have made forecasts of impending famine. However, although the population of India today is larger than ever, the standard of living of a large proportion of man kind is also much higher than at any time in recorded human history. Equally, looking into the future, it appears that the potential for economic growth is far greater than the potential for population growth. For instance, new strains of wheat, rice and other foods have been discovered that could increase yields by two to five times over short periods of time.

77. ZEAUDEEN (P). Human resources and economic development. RI. 38, 9 ; 1975 September; 197- 98.
- It is generally accepted that population and economic development are closely related. Population has two pronged relationship with economic development, as a resource and as a consumer. The quality size, rate of growth, composition, and distribution of population are the basic determinants of the pace and level of economic development. The rate of growth of population is an important factor determining the rate of economic development. Abnormal size and increase in population reduces the growth of national income per capita income retarding the economic growth of the nation. Rising population leads to various types of unemployment problem, worsened by the rate at which the population increases every year. There are several demographic distinction between the rich and poor countries which help explain the existing gap per capita income levels, as well as the difficulty in narrowing the gap. One factor tending to keep the per capita income down in India is the high proportion of dependent people. Success of family planning programme will help in creating a conducive atmosphere for the quicker economic development.

POPULATION, GROWTH and ECONOMY, POVERTY.

78. KULKARNI (VB). Population and poverty. IE.  
1973 July 4; 6 : 3.

It is a common knowledge that over population is at the root of India's many hungers and miseries. It is not the percentage but the actual size of the addition to the existing population that really matters. Viewed in this light, there is absolutely no room for complacency about the gravity of India's population problem. Poverty in this country is not only wide spread but chronic. Growth of population must be checked by family planning.

POPULATION, GROWTH and EMPLOYMENT.

79. BOSERUP (Mogens). Employment aspects of population growth in India. In India's population. 1959; 13 3.  
The question of employment in relation to prospective population growth is often thought in the terms that how shall we find employment opportunities for additional millions. The purpose of this paper is to argue that this is perhaps not the most fruitful approach. A better way of looking at the problem is to ask that how can we, in the face of increasing numbers, improve the degree of utilization in the labour force.

80. DATAR (BR). Population and employment in India. In India's population. 1959; 107.

In this article, tables regarding age distribution of males and females in 1956 is given. The analysis of table reveals the magnitude of our employment problem. Assuming a backlog of 7 million and new entrants at 14 million, there would be a colossal task of providing employment opportunities to about 21 million.

81. DAVENPORT (H). Employment and population growth in India. In India's population. 1959; 115.

In this paper, an attempt is made to suggest a few of the factors which need to be kept in mind when considering employment aspects of population growth. No attempt is made to discuss each of the factors at length.

82. RAO (VKRV). Population growth and its relation to employment in India. In India's population. 1959; 87.

The large size of our population makes for a large sized employment problem even with a small rate of increase, and begins to reach almost

astronomical figures with an annual rate of increase of 2 percent or so. Details by sex and quinquennial periods of the additional employment in agriculture and non agriculture visulized by the adoption of the different models are given in the statistical appendix to this paper.

83. SINHA (JN). Employment implications of population growth in India. In India's population. 1959; 124.

It is the purpose of this paper to bring out the employment implications of population growth in India. In the view of the dangers and pit falls involved in making population forecasts, no attempt is made here to chart a definite course of population growth and evaluate the possibility of full employment. Alternative rates of population growth are set forth and the likely affects on employment prospects are examined. The approach is illustrative and explanatory rather than predictive.

POPULATION, GROWTH and ETHICS.

84. CALLAHAN (Daniel). Ethics and population limitation. Science. 175, 4021; 1972 February 4; 487 - 94.

While in the past, child bearing was uniformly assigned a high social value, present conditions make unrestricted population growth a source of grave dangers to the human race. Formulation of policies require 3 concerns, the ends pursued, the means available, and the criteria for evaluation of means and ends. The primary human values have been freedom, justice and survival; each can some times validly be traded off for the others. The value of freedom implies that child bearing is primarily a parental choice, subject to the rights of others; government may intervene to protect these rights, but must show clear danger to them. Governments must first prove that voluntary programmes have been tried and have failed, and that crucial human values are threatened by population growth, to justify coercive measures, which even then can be overthrown by demonstrations of severe harm to the

crucial human values; they are obligated to try the least coercive policies first.

POPULATION, GROWTH and FERTILITY, BIHAR.

85. BANERJEE (Shailendra Nath). Effect of changes in age patterns of marriage on fertility rates in Bihar, 1961-68. Man in India, 53, 3; 1973 July - September; 262-78.

Age at marriage is an important intermediate variable affecting fertility. A rise in marriage age may reduce fertility. The extent of reduction is computed for Bihar. Census data for Bihar in 1961, adjusted for known error patterns, are used to compute the effects on fertility 1961-68 if mean age of females marriage had been raised from 15 to 19 years. The result of this changed pattern is a significantly lower fertility.

POPULATION, GROWTH and HUMAN DEVELOPMENT.

86. PATHAK (GS). Population growth and human development. Indian worker, 22,9; 1973 November 26; 9.
- The reason for the increase in the population is well known, namely, the sharp decline in mortality rates, while birth rates, though they

have also shown some decline, continue to be maintained at relatively high levels. No population policy can be effectively formulated and implemented in isolation but always as an integral part of the total socio economic development strategy in the country. Social growth and economic growth are so inter-laced that they cannot be dissociated from each other. In short run high population growth tend to retard social and economic development because they alter the age structure of the populations, place a very heavy burden on education, employment, health services, food and natural resources.

#### POPULATION, GROWTH and INCOME.

87. BECKMAN (M). Income growth and population growth, or, the race is not always to the swift. European Economic Review, 1,4 ; 1970; 546 - 552.  
Presents and discusses a model in which population growth is tied directly to out put growth.
88. SAXENA (JP). Regional imbalances in population and income. Eastern Econ. 55,20;1970 November 13; 850-54.

An attempt has been made in this article to analyse



the growth rate of population and income in India by states, which can provide guide lines for the formulation of population policy. The per capita income in India is among the lowest in the world even after the implementation of three five year plans. It is a paradox that the national domestic product is rising whereas per capita income is declining, naturally as a result of a more rapid growth of population than of NDP.

#### POPULATION GROWTH and INDUSTRIAL DEVELOPMENT.

89. CIRVANTE (Suresh R). Growing population a drag on industry. Yojana. 12, 25; 1968 December 22;9. In industrially advanced countries, increasing population has a beneficial effect. But, in India where industrialization is yet to attain the developed country's standard higher rate of saving rather than consumption would help to generate higher income in future by making possible a rapid rate of investment. In the light of this situation a fast increasing population is bound to

aggravate the problem of unemployment etc.

The remedy to this difficult and unenviable situation lies in securing a marked increase of both agricultural and industrial production at a rate which is much faster than the rate of increase of the population.

#### POPULATION GROWTH and LABOUR.

90. CHELLASWAMI (T). Population trend and labour force in India, 1951-66. Population Review. 2,2; 1958; 42-48.

The main object of this paper is to provide estimates of the future labour force in five year intervals upto the year 1966 by the component method. Before applying the labour force participation rates to different sex and age groups, the projected population has been distributed on certain simple assumptions by rural and urban sectors for both the sexes in different age groups.

91. DAR (Usha). Some observations on labour participation based on family size. In India's population. 1959; 137.

This brief paper is based on the data collected

in an Occupational and Employment Survey conducted by the Demographic Research Centre, Institute of Economic Growth, Delhi University, in Mukhmelpur village. The study is limited to cultivating families and purports to show the impact of family size on labour participation and adult female labour participation is examined separately. The analysis is based on unchecked data and the results, therefore, are tentative. The numbers involved are very small and, therefore, the conclusions need not be taken to be firmly established.

92. TATA (Naval H). Population problem. ET. 1973 September 12; 6 : 2.

It is a speech at the Asian Employee's Seminar on Population and Family Planning sponsored by the ILO at New Delhi in March 1971. Size of the national labour force is bound to expand rapidly during the next few years, as the new entrants are already born. Unless we act promptly and decisively, we will never be able to come out of the morass of poverty and ensure a higher standard of living for our people. Whilst the formulation of a

population policy is a matter to be dealt with at the national level, the subject offers a splendid opportunity for a meaningful collaboration between labour and management in the interest of ensuring the workers a happy and contented life.

#### POPULATION GROWTH and LAW.

93. LEE (Luke T). Law, Human rights and Population : Strategy for action. In Population strategy in Asia. 1974; P 204.

Today there is a conflict between the pace of growth of the human race and the disproportionate increase in the production of resources necessary to support mankind in peace, prosperity and dignity. It has been only within the past decade that the problem associated with population growth have seemed to be a proper subject for legal concern. Because research in this area is of so recent an origin, this article is designedly exploratory in nature. It seeks simultaneously to stimulate and provoke further research, thought and discussion on the subject. To this

and it is divided into three parts : first, a review of the status and relevance of the concept of human rights; second, a discussion of the link between human rights and population control; and third, a proposal for a search strategy of action.

#### POPULATION, GROWTH and LITERACY.

94. LAL (RB) . Literacy levels and population growth. Population Review. 12, 1-2; 1968; 55-59.

Presents literacy rates for the States of India in 1961 and analysis. Crude birth rate, child woman ratio, and rural urban differentials.

95. SUR (AK). Man, diet and literacy in India. MR ; 127, 6 ;1970 December; 417-21.

The problem of the human factor in India requires to be given a fresh look. There is need for bringing about a better balancing between space and population by restriction of immigration into areas of high congestion. Then there is need for checking further growth of population in areas of high birth rate. There is need for

improving the physical efficiency of the people by a crash programme of adequate production of both protective and non protective foods. Lastly, there is an urgent need for liquidation of illiteracy.

POPULATION, GROWTH and MAN POWER.

96. GNANASEKARAN (KS) and IYER (R. Ramalinga). Population growth and manpower in the States of India. Kerala Labour and Industries Review. 3, 3 ; 1965; 163 - 73.  
A study of inter-casual change 1961-61 in seven States (Assam, Punjab, Uttar Pradesh, Maharashtra, Gujrat, West Bengal and Kerala). Aspects considered; Differential population growth in the States; Education and man-power development; Manpower utilization in the first and second plans; Implication for future planning.
97. TILAK (VRK). Future manpower situation in India, 1961-76. International Labour Review. 87, 5; 1963; 435-46.  
Expected population increase analysed and then composition of the future labour force by age and

sex estimated. Projections of employment by industry and occupation are given and also balance between future supply of new entrants to the labour force demand for manpower at different levels of education are estimated.

#### POPULATION GROWTH and NATIONAL INTEGRATION.

98. BHAVE (Vinoba). Population explosion and national integration. Sarvodaya. 24,3; 1974 September; 75 - 78.

This is Vinobaji's address at the conclusion of his discussions with the secretaries of Harijan Sevak Sangh and Gramdan Board on 10-5-74. According to Vinobaji's in the next 30 years India's population would be doubled, today's population is 55 crores and by this end of this century our population would be 110 crores. The population of the world would be 720 crores at that time. According to him we must practice self control. Secondly, we must increase our agricultural production. What our country needs most today is national integration. There may be many reasons for dissatisfaction among the people of different states, but they must preserved the unit of the country. Strengthened national

integration can be brought by improving agricultural production and encouraging cottage industries.

#### POPULATION GROWTH and NUTRITION.

99. GINDERTAEL (Jean-Michel Van). Population and nutrition - 32 years from now. Yojana; 12,6 ; 1968 March; 18 - 20.

In India there is a rapid rise in population. It is hard to imagine the gigantic investments needed to create a viable economy that would yield adequate reinvestments in the form of housing, hospitals, and road for a population that has doubled in size. We must hope that advances in scientific knowledge will ease the pressure which soaring birth rates are already creating in country.

#### POPULATION, GROWTH and POLLUTION.

100. DEORAS (PS). Population and pollution. TI; 1973 January 21; 8 :6-7.

While Malthusian philosophy linked population growth with the problem of food supply, some advanced nations are linking it now to pollution.



Endless statements are made about the starving population of India and advising Indians to reduce their breeding. Industrialisation without pollution, urbanisation without destroying the natural balance, spread of proper education, better indigenous health services and raising the marriage age to 20 are the factors that will control the rate of growth of population.

#### POPULATION GROWTH and POVERTY.

101. POPULATION AND poverty. Assam Tribune; 1972  
December 20; 4c - f, 5c.

In the particular case of India, population growth has undoubtedly been a retarding factor, off setting the gains of GNP growth and keeping per capita income practically around stagnant levels. What adds a particularly distressing dimension to the Indian population problem is the disproportionately large number of children in the total population. This age group is a consuming section, not a productive section and is therefore, a net liability on the population.

POPULATION, GROWTH and POWER POLITICS.

102. SHARMA (PM). Power-politics and population.  
United Asia, 22, 1 ; 1970 January-February;  
28-34.

Population is related to every other problem of a nation. It is inseparably related to the well being of the world, its security peace and prosperity. It involves economic, technological, political and cultural problems and the over all international game of power politics. Generally, the population growth of a nation inevitably produces pressures for expansion and war. Some assume that a general increase in the world's population will produce pressure in favour of more effective international co-operation. India with its great population, industrial development and mighty military strength, can prove a balancing force for establishing peace. If we fail to make use of this opportunity, it may prove a blunder.

POPULATION, GROWTH and PROSPERITY.

103. DAM (Andre Van). Population versus prosperity?  
Int Stud. 15, 2; 1976 April - June; 287 - 94.  
 Highest growth rate of population occurred in the Third world, specially in India, where three billion people live. On the other hand, most of the affluence is centred in industrial nations where one billion people have their home. This lends an extra dimension to the crucial question whether it is population growth or the increase in affluence that exerts the greatest pressure upon the world's vital and scarce resources. If it is essential to reduce the fertility rate in order to lower the pressure of population on scarce resources, it is correspondingly vital to bend the exponential growth curve of abundance into gentle saturation.

POPULATION GROWTH and PUBLIC POLICY.

104. MEHTA (BC). Population explosion and public policy.  
EA. 16,12; 1971 December; 517-28.  
 Population explosion poses one of the most important problems of economic development and

public policy in India. The relationship between population growth and economic development is a two way relationship. Economic development causes population to increase at a rapid rate in the initial stages of economic development of the under developed countries thereby setting in motion a sequence which may ultimately dampen the pace of economic development itself. The study points out that research should be undertaken on the dynamics of demographic behaviour on state and intrastate levels. In this connection, there is a pressing need to develop indicators for quantitative measurement of economic and social development and change at the district level. This being done, the dynamic inter-relationship between socio economic conditions and demographic behaviour could be studied and understood well. The results of this study point out that only a big push - a socio economic revolution - can be expected to reduce fertility so that fertility decline out paces the mortality decline. Family planning is no substitute for rapid economic development.

POPULATION, GROWTH and RELIGION.

105. CHETHIMATTAM (John B). Problem of population explosion and traditional religion. Religion and Soc; 19, 3; 1972 September; 29 - 34.
- Population explosion is an economic problem. Mass of humanity is increasing at an alarming rate, far exceeding the rate of growth in productivity. In view of the higher standard of living, greater cost of education of children, and the occupational strains imposed on parents, the problem is more acute. The real tragedy in this situation is that religion that normally provided clear and secure solutions to the problems of human life has been in this particular subject a real obstacle in arriving at a meaningful rational solution. Instead of approaching the issues with a positive and open outlook, religion has faced it with a rather negative attitude. Traditional religion formed its principles and conclusions in this matter at an early date when the real need of society as a whole and of nations and families was an increase in population. Though this situation has drastically changed, religions stuck in the past find it difficult to adjust

themselves to the changed socio - economic situation of humanity.

POPULATION, GROWTH and SOCIAL CHANGE.

106. AGARWALA (SN). Impact of population growth on Society; Indian J Soc wk; 26, 2; 1965 July; 118 - 25.

The critical aspect of the population problem of the developing countries, may, of the contemporary world is its timing. Rapid population growth would not be a major problem if it occurred along with rapid economic and social development. The demographic dilemma which India faces today is typical of the developing countries. A family planning programme in India which seeks to involve a large proportion of the population in the regular use of contraceptives should give little or no attention to the methods of contraception and should largely concentrate on launching a comprehensive communication and motivation programme with the object of bringing about suitable changes in the attitudes and values of the people through a coordinate group, of activities employing the most effective techniques of education and communication.

107. BARNABAS (AP). Population growth and social change : Note on rural society. Soc Action ; 24, 1 ; 1974 January - March; 25 - 32.

This article examines the relationship between population growth and social change in the context of the early age of marriage for girls, family size, migration to the urban areas, and technological innovation. The thesis of the author is that social change is a total phenomenon and that the effort to bring about a change in the rate of population growth must take into consideration the totality of the rural social system.

108. OGBURN (William F). Population, private ownership, technology and standard of living. American Journal of Sociology; 56, 4; 1951; 314 - 19.

Four factors affecting differences in the standard of living : population, natural resources, economic organization and technology are examined. Conditions in United States, United Kingdom, China, India and the Soviet Union are discussed.

POPULATION, GROWTH and SOCIAL DEVELOPMENT.

109. HERZOG (John). Investment in social development: Some implications of demographic conditions. In Population stretegy in Asia; 1974; p 190.
- The usual approach to the relationsnip between population and social development has focussed on effects of population growth and structure as investment requirements, the amount of investment required annually to maintain or attain a given level of social capital per capita. The paper specifically asks how demographic conditions - and especially the rate of population growth - affect both the role investment plays in social development and the allocation of resources among alternative social projects and programmes. Particular attention is given to the factors and problems that decision makers and social planners must take into account in allocating social investment.



POPULATION, GRO TH and SUPERSTITION.

110. RAMAKRISHNA (G). Superstition of population explosion. Mainstream; 1977 June 18; 12 - 14.
- This article deals with, that how much superstition is responsible for rapid growth of population in India. Population problem is not a problem in itself it should be viewed from the point of view of economic development. There is a powerful strange hold on our minds which has made us incorrigibly superstitious, so much, so we do not analyse our economy which has grown so wretched that it goes on swelling the ranks of the less intelligent and the beggar.

POPULATION, GROWTH and TECHNOLOGY.

111. ROY (Ruhin K). Technology and growing population. SOCH; 1971 April 1; 15 - 23.
- Along with the population growth there is a rapid advancement in technology. With this advancement comes the increased material requirement per capita. In India we have achieved some measure of success in raising our food production. This has been possible through intensive agriculture using

chemical fertilizers and pesticides. A rapid increase in population has resulted in stripping forest areas of wood for housing, supply of fuel and building of roads. Cutting down of vegetation not only reduces the earth's supply of green leaves which produce oxygen, but also increases soil erosion. Technological advance has not only resulted in the pollution of water but it often means pollution of the air as well. While we must work to grow more food without polluting our environment, we must at the same time try to control the growth of population.

#### POPULATION, GROWTH and TOWN, PLANNING.

112. SURI (KB). Towns : Size, economic structure, and growth. Econ and pol wkly ; 3, 32; 1968; 1247-51. Article questions and hypothesis that there is a positive relationship between size and town and their growth, and attempts to indicate an alternative approach to explaining differences in the rates of growth of towns. Growth of town is related not so much to size as to their economic character.

POPULATION, GROWTH and TRADE UNIONS.

113. MAPARA (Govardhan). Attitude of trade unions towards population growth. Indian worker ; 18, 47; 1970 August 24; 5.

It is a generally accepted fact that the ratio between the living standards and the high rate of population growth varies inversely. The population has been ever increasing, but it used to adjust itself due to causes like pestilence, natural calamities, famine etc. The advancement in the field of surgery and medicine has reduced the death rate. Improvements in the living standards are very likely to arrest the population growth but the practical question is that the economic growth which is bound to be slow in the prevailing circumstances, will not be able to keep pace with the increase in the population. It is therefore very urgent that bold and strong measures need to be taken for checking the rapid population inflation. As the pressure of the population growth is felt more at the economically lower strata of society, it is a practical proposition to begin to take

measures against it from that stage. Here comes the special function of the organized sector of trade unions and other various organisations.

POPULATION, GROWTH and URBANIZATION.

114. BHARADWAJ (NC). Changes in the urban population in India. Eastern Econ ; 60, 25 ; 1973 June 22; 1234 - 37.

An increase in urbanisation is closely linked with industrialization or over all economic development. The continuous shift of the rural population to cities for employment in the non agricultural industries is one of the essential conditions for economic progress of a country. This causes high density of population in cities. The article gives data of urban population of different countries, including India.

POPULATION, GROWTH, BIRTH RATE.

115. POPULATION EXPLOSION. National Herald; 1975 November 5; 5.

For a huge country like India, rich in natural resources, a population of 600 million should

have been the main source of strength but considering its level of development and back log of economic and social problems, the population problem is serious. Though India has the largest family planning programme she has not made much headway in reducing the birth rate. In urban families and among educated people there is an increasing awareness of need for birth control. It is in rural areas that family planning propaganda should be intensified.

#### POPULATION, GROWTH, CAUSES.

116. AGARWALA (SN). India breeds and how. Ill wkly; 1972 July 23; 8-13.

India is a population giant, second most populous country in the world. India's population is continuing to grow at a fast rate. The main reason for the rapid increase in India's population is a decline in the death rate and not an increase in the birth rate. Therefore the future growth of our population will depend largely upon the fluctuations in the birth rate - whether it declines or stays high. There are

only two ways of reducing the birth rate; and increase in marriage age and use of contraceptives. The latest census figures show that the Christians, Sikhs, and Muslims - in that order - are growing at a faster rate than the Hindus.

117. CHANDRASHEKHAR (S). Falling death rate main factor : Radio talk. Population Rev ; 11, 1; 1967 January; 60 - 61.

In a broadcast talk on India's population problem Dr. Chandrasekhar said that in the world today India ranked second in population numbers. Rapid growth can be explained in terms of the high birth rate and rapidly declining death rates. Dr. Chandrasekhar said that the relative scarcity of females or the excessive masculinity of the Indian population had always been a significant feature of the Indian population. High birth rate, universality of marriage, and absence of any effective wide spread family planning programme add to population growth.

118. MAHALANOBIS (PC) and BHATTACHARYA (D). Growth of population of India and Pakistan, 1801, 1961. Artha Vinana 18, 1 ; 1976 March ; 1-10.

W.H. Moreland estimated the population of India as 100 million in 1600. Kingley Davis raised this figures to 125 million and assumed there was not much change for 150 years and a slow growth there after. Available evidence gives a consistence view of a slow growth of population upto 1921. A sudden acceleration in the rate of increase started from 1921. Mortality rates were clearly responsible for the observed pattern of changes in the rate of growth of population. The declining ratio of land per capita as pointed out W.W. Hunter in 1881, and by the Census commissioner in 1951, might be ascribed basically to the growth of population, and the increasing number of persons engaged in agriculture. Urbanisation progressed at a slow rate in relation to the total population. The urban population in the Indian Union doubled between 1901 and 1961. The rate of growth of population of towns of smaller size was much slower; the smaller the size of the town, the lower was the rate of growth of the population.

119. RAJA (KCCE). Population growth in India.  
Journal of Family Welfare ; 3, 4; 1957 ;  
 109 - 120.

Factor determining population growth are discussed and some forecast made regarding India's population. Teaching and research programme are also mentioned.

120. TALEKAR (UR). Population problem. National Herald ; 1972 October 17; 4.

Population of India is large and is increasing at the rate of 2.5 % per annum. Reasons for rapid increase of populations are superstition, illiteracy, marriage at early age, universality in marriage, polygamy etc. Inspite of the fact that the birth rate has been reduced, India still stands at the top in the list of countries as regards birth rate. Yet the existing circumstances favour the growth of population. Though the increase has brought (a) an increase in production (2) more land under plough yet the birth rate remains alarming. The rising population in India must be checked by family planning, education, by increasing quality of population.



## CONTROL.

121. DIXIT (Dhirendra Kumar). Anatomy of population explosion. Sunday Herald; 1980 August 23; 2. The sourt in population growth in India has ominous implications with catastrophic consequences. Our efforts in eradicating diseases over the years resulting in general improvement of common man's standard of living have been in a way responsible for this unpresedented growth rate. It is not just a baby boom. Fall in infant mortality, increased life span and better quality of life are also contributory factors. Poverty and population problem are inextricably interwined. India is the first country in the world which realized the impending calamity and recognized the importance and urgency of preventing population proliferation from becoming unmanageable. Reasons for family planning efforts not clicking in India to the desired extent are illiteracy, antiquated superstition, ossified tradition, unfounded fear and suspicion etc.

POPULATION, GROWTH, CAUSES, EMPLOYMENT, POLICY,  
in relation to.

122. KHANDEWALE (SV). Population change and employment policy in India. EA; 15, 5; 1970 May; 229-36. Change in the size of population is a function of two variables, i.e. birth rate and death rate. These variables are influenced by various socio-economic and political factors. A sharp fall in death rate and a relatively slight decline in the birth rate have resulted in population explosion and this in turn has and will continue to result in an explosion in the labour market during the next two decades. And bulk of the new labour supply will be in the rural sector and will be educated. These facts, therefore, should serve as back ground for the formulation of employment policy for some decades in India.

POPULATION, GROWTH, CAUSES, PLANNING.

123. DEMOGRAPHIC SITUATION in the ECAFE region. In Population strategy in Asia, 1974; P 69. The four largest countries, China, India, Indonesia

and Japan, together have 78 % of the total population of the region. Rapid decline in mortality has made a substantial contribution to population growth in the countries of the region, where there has been a decline in fertility it has generally been not sufficient to off set the decline in mortality. The population growth trends in the countries of the region indicate the urgency of the problem and the need for policy - makers, planners, administrators and researchers to coordinate their activities, as it is by mutual support and co-operation that a realistic solution to the people's problems will be achieved.

#### POLYGYNY.

124. CHOJNACKA (Helena). Polygyny and the rate of population growth. Population studies; 34, 1; 91 - 108.

The roots, motives and feasibility of practising polygyny in societies with a balanced sex structure and the effect of polygyny on the rate of population growth are considered. The findings

imply that during the transition from polygyny to monogamy family size will tend to diminish, although initially fertility may not decline concurrently with changing socio economic status. The most important effects on the rate of population growth result from the increase in age at first marriage and declining proportions to ever married man.

#### POPULATION, GROWTH, CENSUS.

125. GOSAL (GS). Regional aspects of population growth in India, 1951 - 61. Pacific view point; 3, 2; 1962; 87 - 99.

Discusses general and regional population trends in the country from census figures for the period from 1901 and particularly the period from 1951-61. Author mentions the continuation and intensification of the developed trend since 1921 and feels an explosive stage will be reached by 1971.

## WEST BENGAL.

126. DAS (Amal K) and BANERJEE (Swapan K). Certain aspects of population growth amongst the tribes of West Bengal. Bulletin of the Cultural Research Institute.; 3, 1; 1964; 1-14.

A study of fertility and morbidity among tribal communities in three selected villages in 1962. Covers : age, sex and marital status patterns, age at marriage and intervals between marriage and first birth intervals; children ever born and duration of marriage; birth rates; age specific death rate and causes of death; morbidity and health attitudes; attitudes on number of children desired and preference for the sex of the issue; family planning; knowledge about maternal and infant death.

## POPULATION, GROWTH, CONTROL.

127. BOSE (A). Growth of population in India and the demographic cycle. Indian Economic Journal; 1964; 5 - 19.

In this article, the possibility of a new type of demographic cycle having a simultaneous fall

in mortality and fertility during the process of industrialization has been discussed. It suggests effective means of population control and modernization of villages.

128. CHADHA (VK). Population explosion. Indian worker; 18, 15; 1970 January 12; 9.

In India, if the population goes on increasing at the present enormous rate, it will become difficult to provide enough doctors, houses, teachers, and schools to meet the minimum needs in future. Population growth depends on the relation between births and deaths de-facts. Birth rate in India is very high. Demographically speaking there are three ways to control the problem (1) By raising the death rate (2) encouraging emigration or (3) lowering the birth rate. No one will recommend the first method. Emigration does not offer much solution. To keep a check on growing rate of population it is essential to enhance the marriage age, and to bring family planning in regular practice.

129. CHANDRASEKHAR (S). Billion Indians by 2000 A.D.  
Population Rev ; 21, 1-2 ; 1977 January - December;  
129 - 31.

For us in India, with limited national land area, low level of technology and poor levels of consumption for a majority of the population, our present total population of about 612 millions has reached something of a crisis dimension. Two facts about the growth of our population are usually overlooked. One is that the annual rate of growth of our population is not unusually high compared to more than fifty other countries in the world. Secondly, we started as an independent nation with a large population and therefore even a nominal rate of increase nets us large annual additions. But as this fact is an obstacle to our national effort to liquidate poverty we want to do so something to curb the growth of population. Once we reduce the nation's birth rate to about 25 per 1000 we shall discover to our great relief that our problems of food supply, housing, schooling and health services and other problems become comparatively easy to solve.

130. CHANDRASEKHARAN (C). Indian demographic trends with a projection into next 25 years and their significance for social welfare. Indian J Soc Wk; 26, 2; 1965 July; 126 - 28.

Since 1921 the population of India began growing at a much faster rate than before. India's future population size will be governed by trends in the birth and death rates. The expenditure on school education, maternal and child care, housing and other welfare purposes will be relatively higher if fertility continues to be high. Division of expenditures to immediately productive purposes may not be possible as long as pressure of the educational housing and welfare needs of the growing population is not lessened. These needs can be reduced considerably by a decline in fertility.

131. D'SOUZA (Anthony A). India's population problem in perspective. Social Action; 23, 4; 1973 October - December; 343 - 60.

Modern demographic problems in India are varied and complex and consequently require a multi-dimensional approach. To meet the challenge of population growth, the author suggests improvement



of the standard of living, the need for population education and raising the status of women. He also recommends various measures designed to promote fuller utilisation of human resources. He emphasises the need for economic, social, and cultural changes required for the development of a more responsible attitude toward parenthood family and society.

132. RAY (Sankar). Population behaviour and its control with particular reference to India.

Mod. Rev. 117, 3; 1965 March; 227 - 30.

The voluminous influx of the population to an ever increasing extent has laid down an effective imprint upon the tranquil totality of human species today. Our flow of life over the universe is suddenly impeded resulting in a crisis in civilisation. Health conditions are appreciably improving. Death rate has come down by 25%.

While these achievements in the field of public health are worth praise, the simultaneous and correlated drive for family planning should be a must. Regarding growth models, three models are mostly accepted: Malthusian, Optimum and Harrod Domer. The first two are comparatively obsolete

and the last one is in vague due to its precision and purposiveness.

133. REVELLE (Roger). Problem of people. Population Rev; 10, 1; 1966 January; 17 - 23.

Present rates of human population growth confront us with a problem that is unique. Although population growth clearly cannot continue indefinitely, it is equally clear that given the right social and economic conditions, and a sufficiently high technology, the resources of the earth could support a much large number of human - beings than are now alive. The real and present question is not population size in the future but the rate of increase today. Population education should be given at university level. Our immediate concerns are family planning, population control, and the balancing of resources development against population growth.

134. SRINIVAS (MN). Curbing population growth : Just raising age of marriage will not do. Yojana; 1977 November 16; 33.

Shri Raj Narain, Union Minister for Health and Family welfare, recently announced that the cabinet

had approved of a proposal to raise the minimum age of marriage to 21 years for man and to 18 years for woman. If government is able to enforce this measure, how effective will it be in lowering the rate of population growth? The period of high fertility among woman is 25 - 29. If the new minimum age comes into force it may be assumed that woman at marriage will be in better health. More mother and infants will survive, and it will add to the rate of population growth.

135. TALEYARKHAN (Homi J H). Population explosion. Eastern Econ (Annual Number); 1969; 1259 - 62. The root cause of all our economic travails is the population explosion. Unless we are able to control the rise in population, whatever we do will never suffice to meet the ever growing requirements of our people. Our per capita income will remain pitifully low in comparison with the advanced countries of the world. One of the reason of rapid population growth is improved health services. According to the author the only effective remedy in this country is sterilization. It may further be necessary to raise the

present minimum age of marriage as an additional measure for controlling the rise in population.

#### ABORTION.

136. MOHAN (Raj Pal). Abortion in India. Social Science; 50, 3; 1975; 141-43.

Abortion in India has a history as long as the civilization. In ancient and traditional texts, debate can be found on the exact moment when life begins. Despite wars, famine and diseases which extinguish adult life, philosophical concern seems centered on the fetal situation. Under colonial rule from Britain, abortion was punished, in the abortionist and in the mother, by the Indian Penal Code enacted in 1860. Since then, demographic and humanitarian concerns have greatly liberalized abortion laws. Continued population concerns may induce a liberalized view of abortion on a global perspective.

#### FAMILY PLANNING.

137. AZAD (Amar Singh) and GARG (Pyara Lal). Family planning and poverty. Mainstream; 16, 19; 1978 January 7; 25-29.

It is said that India is an over populated country.

Many learned professors are trying to convince us that this population explosion is the only hurdle in our efforts to fight against poverty. But, people are not poor because they have large families. Quite the contrary, they have large families because they are poor. In the given conditions, large family is a need for the rural poor. They must produce most children in order to survive.

138. BALJIT SINGH. Family planning : Critique of a view point. Mainstream; 1978 February 18; 11-14;

Several view points on family planning, like religious and, ultra conservative which stands for compulsory sterilisation to achieve a progressive improvement in the living conditions, developmentalist, Marxist, women-libbber~~ts~~ and so on, are given. The evolution of family planning programme in India has been traced with its various approaches.

139. CHANDRASEKHARAN (C). Indian fertility in a changing economic and social setting.  
Family Planning News; 3; 1962; 228 - 236.  
Discusses Indian levels of fertility as compared with other countries and says that a downward trend cannot be effected without a large scale sterilization campaign.
140. FAMILY PLANNING has its impact on population growth. TI ; 1971 April 13; 4 : 4-5.  
Family planning has had its impact on the India's population which on April 1, 1971, was 14 million less than the officially projected figure of 561 million. According to Chandrasekhar the assumption made by an expert committee of the very rapid fall in the mortality rate appeared to have been somewhat over optimistic. The impact of family planning would also appear to have been imperceptibly more than what was expected.
141. INFORMATION SERVICE OF INDIA. Family planning programme in India. In Population crisis and the use of world resources; 1964; 155.  
India ranks second in the world population next only to china. The impact of the population

problem on resources is alarming. This paper gives a brief account of what is being done in Family Planning Programme in India.

142. MIRDHA (Nathuram). Population increase and agricultural production; Farmer and Parliament; 11, 8 ; 1976 August ; 15 - 17.

"Population explosion", is a world phenomenon which is causing serious concern particularly to the developing nations, like India. Decrease in the death rate and increase in the fertility and birth rate are responsible for increase in population. The need to stem the growth rate of population can not be over emphasised. The family planning measures must therefore, be implemented with full vigour and energy. India is a vast country. Its production potential has not yet been fully exploited. There is large scope for developing the irrigation potential of the country and increasing production.

143. MISRA (RC). Soft approach no remedy. Sunday Herald; 1980 August 24; 2.

Owing to our huge population base even a marginal set back in birth control can disturb the process of stabilisation of population growth quite largely. The planners warn that such a galloping growth of population will adversely effect India's development. There is a fear that the frame work of India's planned development may be thrown out of gear by run away increase in population. Birth control will not respond to a genteel approach. It needs firm handling in Indian condition.

144. MOHHANTY (PC). Brahmacharya or Sterilisation. Imprint; 18, 2 ; 1978 May; 19-21.

The weakness for getting a son at any cost, says the author, a national weakness. The superstitious belief that only a son can bring about our salvation and free us from the bondage of Karma, has bedevilled all family planning programmes in India. Very soon, our fast growing population is going to hit the 1000 million mark. Any family planning programme in India would fail so long as



this superstitious belief has not been uprooted from our national subconscious mind.

145. POPULATION EXPLOSION : Is family planning a solution? People's Democracy; 7,7; 1971 February 14; 7 - 8.

The "population explosion" in India is being offered by the ruling party as an excuse for its economic failure over the past two decades. No matter which economic problem is mentioned, the increasing flow of population is cited as something hindering its solution. It is true that a large population is not always an economic liability, and that it is the low rate of growth of the Indian economy in relation to population growth which is causing the economy to suffer.

146. REGION AND country situations : India. In World population growth and response 1965-75; 1976; P 78.

India is the world's second most populous country. India's already enormous population is expanding by 2 % annually. The tide of population increase is recognised as a major deterrent to economic and social development. India's population/family planning programme has grown to a nation wide effort of high national priority.

147. SINHA (JC). Population problem in India.

Modern Review ; 94 - 5; 1953; 361 - 64.

Discusses different aspects of the population problem and concludes that since we are over populated we have to resort to active family planning, increased productivity both of industries and agriculture.

POPULATION, GROWTH, CONTROL, FAMILY PLANNING,  
and ECONOMIC DEVELOPMENT.

148. MEHTA (JK). Population, time lag and depreciation.

Indian Journal of economics; 45, 177; 1968;  
113 - 23.

Family planning like any thing else must be well planned. For desirable results we must cut down population in those sectors of economy where there is surplus man power. If there is no surplus in any particular field, i.e., when there is more or less equal distribution, we should uniformly cut down our numbers.

149. NARAYNA (DL). Economic planning and family planning. Indian Worker; 16, 23; 1968; 5 - 9.  
Discusses patterns of economic expansion, economic planning in India, strains and stresses experienced during the Third five year plan, slow rate of economic growth, rapid growth of population, employment opportunities etc.

150. RAJKUMAR (R). Impact of population on India's economic growth. AICC Economic Review; 1967 November 1; 17 - 22.

The article outlines economic consequences of rapid population growth. Discuss activities of family planning programme included in India's four five year plans. Gives recommendations for future policy on fertility control.

POPULATION, GROWTH, CONTROL, FAMILY PLANNING and HEALTH.

151. TAYLOR (Carl E). Health and population. Foreign Affairs; 43, 3; 1965; 475-86.

Poses the problems arising from population growth and how family planning is only solution to this problem since this is directly related to economic growth also.

POPULATION, GROWTH, CONTROL, FAMILY PLANNING,  
INDIGENOUS MEDICINES, uses of.

152. BHATIA (JC) and NEUMANN (Alfred K). Practitioners of Indegenous Medicine and India's Family Planning Programme. Indian Journal of Social Work; 34,1; 1973 April; 27-35.

India's health service delivery system could indeed be enriched by integrating indigenous medicine practitioners into Family Planning net work of the government. A pilot study in which 62 IMP's were questioned as to their knowledge and opinion on Family Planning, their activities or role in that field, what they thought about the government programme in relation to it and their desire or lack of desire to cooperate with same, is summerized.

POPULATION, GROWTH, CONTROL, FAMILY PLANNING,  
STERILIZATION.

153. MOHILE (BV). Population explosion. Maharashtra Medical Journal; 24, 8 ; 1977; 355 - 58.

Sterilization of men and women affords to be the

safe and most effective method of population control. Population control is necessary in any democratic country on various grounds and the author feels that if cooperation is not forthcoming, coercion may be used in population control programmes.

POPULATION, GROWTH, CONTROL, FERTILITY.

154. KAMERSCHEN (David R). Economic model of fertility. International review of History and Political Science; 10, 2; 1973 May; 85 - 132.

Economists have traditionally left the study of population to biologists, demographers, sociologists etc. Partly because of apparent contradictions and the poor prognostic power of the Malthusian postulate. It is crucial that interdisciplinary approaches be utilized in the study of the population problem. Population growth with fertility measured in several ways and influenced by various economic and social forces is analysed economically.

155. SINHA (UP). Fertility and mortality in India during 1951 - 1971. Artha Vijnana; 18, 1; 1976 March; 53 - 61.

Population projected in this paper, with the base year 1951, show that the estimated populations of 1961 and 1971 are very close to the enumerated populations. Moreover, the vital rates during the period 1951 - 71 come very close to the estimates made by other authors and surveys.

#### KARNATAKA.

156. SHOLAPURKAR (MV) and RAO (A). Changing role of demographic factors in the reduction of fertility in Karnataka. Journal of Instt of Economic Research; 12, 2; 1977; 31-39.

The paper describes the decline in the birth rate of the State Karnataka during 1961 to 1974 in India. The data has been collected and analysed in order to find out the relative effects of changes in the demographic factors. Four tables have been presented in the paper to analyse the findings. Table 1 gives the proportion of married women in the age group of 15-49 for specified years.

Table 2 gives the rural urban composition of married women. Table 3 gives the age specific marital fertility rates for rural and urban areas and table 4 gives the relative contribution of each demographic factor and marital fertility to the decline of fertility level.

#### PSYCHOLOGY.

157. ALEYAMMA (George) and MATHAI (AM). Applications of the concepts of affinity and distance to population problems. Journal of Biological Science; 6, 3; 1974 July; 347 - 56.

Statistical concepts of affinity and distance were applied to live - birth data. Previously used for taxonomic purposes, these measures were used with data on live births in Kerala. The data were obtained in a survey of fertility and other socio economic variables. The distribution of live births in the households of the 6 villages were examined. Affinities and distances between religious groups were also examined, each religion being characterized by the distribution of live

births. Secular trends were noted possibly indicating changing patterns of group behaviour. The method may be relevant to population problems.

158. BACK (Kurt W). Human nature, psychological technology, and the control of population growth. Journal of Social Issues; 30, 4; 1974; 279 - 95. The most developed area in psychology relevant to population control is the implementation of the use of birth control methods. The development of the birth control movement has exhibited an ambiguity about ultimate aims and the advisability of certain means. Imposition of fertility standards may be technically feasible, but the question remains whether this imposition will conflict with other human values. The psychologists contribution may be significant in the determination of the strength and modifiability of these values. Looking at population problems in a large historical perspective will help the psychologist to provide scientific knowledge for population policy.



## POPULATION, GROWTH, DATA.

159. POPULATION. Commerce (Suppl); 117, 3008; 1968  
December 28; 37.

This gives the comparative economic data of population between India and Iran. It compares population, density of population, GNP, per capita GNP etc.

## DECLINE.

160. DECLINE IN population growth rate to be probed. TI;  
1971 April 16; 10 : 3.

Union Health Minister, Mr. K.K. Shah, joined issue with those who contended that the death rate had not come down to the anticipated action. He was referring to criticism that the population rise was below the projected figure only because of the family planning programme. He quoted figures from some States to show a marked decline in the death rate.

## DENSITY.

161. GROVER (SR). Population growth and density. Yojana; 12, 22; 1968 November 10; 23-24.

The purpose of this paper is to highlight the growth trends of population and its density per square mile and the factors responsible for the density in India. Density of population is high at certain points and declines with distance away from these points. In general, the points of concentration are zones of fertile soil, as in agricultural areas, and locations of easy accessibility, as in industrial areas.

## ESTIMATES.

162. DASGUPTA (Prithwis). Estimation of demographic measures for India, 1881 - 1961, based on census age distributions. Population studies; 25,3; 1971 November; 395-414.

This paper is an attempt to estimate some demographic measures for the 9 census years between 1881 and 1961 by applying uniform computational methods to the data of all years. The measures, by sex, include an abridged life table, the growth rate,

birth rate and death rate, and, as a by product of, rather than a pre-requisite for, obtaining other measures, the smoothed age distribution. The basic assumption under lying the study is that, for all practical purposes, the Indian population can be considered as stable or quasi stable for a period of 100 years in the immediate past.

163. SEN GUPTA (Biswatosh). Population projections of India : Alternative approach. Artha Vijnana 13,2; 1971 June; 237 - 45.

The possibility of projecting future population with the help of replacement index has been explored. It has been observed that the population of India is increasing at a rapid rate as expected. In spite of non availability of sufficient data the present method appears to be quite reasonable for projecting future population. An attempt has been made to find out a relation between the replacement index and the population for India and this relation has been used to forecast future population of India upto 1991.

164. WORLD POPULATION Estimate. Indian Worker; 19, 29; 1971 April 19; 12.

UN experts predict that there will be more than a billion people in China by 1990 and more than a billion in India by the year 2000 when the world's population will be total almost 6.5 billion. These and other projections by the UN Population Division are given in the latest issue of the monthly bulletin of statistics. The latest comparable U.N. estimates of actual population for mid 1969 are 740 million for China, 537 million for India and 3.552 billions for the world.

POPULATION, GROWTH, FAMILY PLANNING, INCOME, effect upon.

165. ENKE (S) and ZIND (RG). Effect of fewer births on average income. Journal of Biological Sciences; 1, 1; 1969 January.

This study analyses, the significance for economic development over 30 years of gradual reductions in age specific fertility rates. Computer analysed results show very great value to economy and individuals of the practice of fertility control.

# POPULATION, GROWTH, FAMILY PLANNING, PROBLEMS.

166. BHATIA (Dipak). Problems and prospects of family planning programme background - Indian experience.

In Population strategy in Asia; 1974; P 295.

The Indian Family Planning Programme has a complex and diversified structure. It has a variety of experiences which merit research and study. These will provide valuable lessons for improving various programme activities as well as useful guidelines for others. Evaluation and assessment are new but difficult functions, not readily accepted in government departments but essential tools for effective management. The most critical factor in a family planning programme is the consumer. It is vital to undertake a series of social researches in consumer behaviour and attitudes and find out methods of demand creation. The programme policies and services must have their focus on the consumer.

# WOMEN'S ROLE.

167. CHANDRASEKHAR (S). India's population problem - Women should plan families. Commerce; 1966 August 27; 354.

There are two well known views on the question of

the relation between the birth and the standard of living. According to first view, the government must help to increase the over all agricultural and industrial production. Population is related to production, but production does not necessarily increase with the increase in population. Five solutions are usually advocated to meet the problem of over population. 1) Scientific agricultural development. 2) Large scale heavy industrialization. 3) Internal migration to ease regional pressures. 4) Emigration of foreign countries. 5) Birth control. Through the three Five Year Plans, India is seriously attempting the first two approaches with partial success.

#### POPULATION, GROWTH, FERTILITY, SOCIAL DETERMINANTS.

168. KAMERSCHEN (David R). Socio economic determinants of fertility patterns. Population Rev; 11, 1; 1967 January; 24-29.

Apparent contradiction of Malthusian theory led economists to the position that population depends on a host of non economic consideration which it was not within their competence or field of interest.

This was a most unfortunate choice. For the vital, challenging problem of population requires the concerted efforts in many different disciplines. The present papers attempts to follow the lead to above economists. Specifically, this paper constitutes an economic analysis of fertility patterns, measured in several ways , as they are affected by economic and social forces.

POPULATION, GROWTH, FERTILITY, RURAL AREAS.

169. KLEINMAN (David S). Fertility variation and resources in rural India. Economic development and cultural change; 21, 4; 1973 July; 679-96.  
The cross sectional relationship between economic resources available to the Rural populations of the different districts of India are examined, as well as their fertility, using indicators based on data from the census of India for 1961. The objective is to see, whether the fertility of rural pre-industrial populations appears to be responses to resource or economic constraints. The variation of fertility between the rural populations of various districts was large and average fertility

was strongly and positively associated with the available resources. Rural areas with lesser resources tended to have lower fertility.

POPULATION, GROWTH, FOOD, NUTRITION, in relation to,

170. UMAPATHY (KP). Nutrition and population explosion. See Welf; 23, 4; 1976; 1-3.

The paper presents the well known salient features of population dynamics with special reference to the developing countries. In India the per capita availability of all food stuffs except that of cereals fall short of the recommended allowance. It has been established that for any given level of family income the larger the family size, the poorer will be the nutritional status. The challenge of the future include not only increased production of food but also in dealing with problems of transportation, storage and preservation, use of non conventional sources of food like leaf protein concentrate, single cell proteins etc.



**POPULATION, GROWTH, FUTURE OUTLOOK.**

171. AGARWALA (SN). Some projections of India's population.

In India's population; 1959; 3.

This is devoted to a discussion of some projections of the future growth of India's population. The discussion is very brief. The main purpose is to point out the various assumptions on which different projections are based and the estimated total population for different years. The technique adopted in making the projections has not been discussed.

172. BANSAL (PC). Future population of India. Indian J of Agricultural Economics; 13, 3; 1958; 25-43.

Factor affecting population growth are reviewed and demographic cycle discussed. Author emphasises need to bring down both rate drastically giving measures which China has taken in the same direction.

173. JAIN (SN). Future growth of Indian population; Analysis. In India's population; 1959; 21.

This gives reasons for rapid population growth in India, its consequences, Article gives trends in

growth rate, death rate, birth rate, and some future projection (after 1961) of population are made.

174. MAUALLIN (W Parker). Population dynamics in Asia, a research focus on the future : Indian Sub-continent. Asian Survey; 6,3; 1966; 158-74. Background and nature of population problems in India and Pakistan are discussed. Indicates research needs in five areas : estimating birth and death rates on a current basis ; studying fertility level, patterns and trends, including the major factors associated with fertility changes; employment and under employment; urbanization and population redistribution; quality of population.

1961-81 AD.

175. TANEJA (KC). Growth of population in India : 1961 - 81. Economic Weekly; 16; 1964; 36-37. Projections by sex and five year age groups by quinquennia, on the basis data from the 1961 census and the National Sample Survey and United Nations model life tables have been presented. Implications for educational planning are discussed.

## 1961-2001 AD.

176. PANDIT (HN). National population explosion; 1961 - 2001. Artha Vijnana; 10, 1; 1968 March; 113 - 37.

The paper examines underlying forces of current national population explosion. On the basis of a detailed examination of the international data of births, deaths, and migration, assumptions about future courses of fertility, mortality and migration in India have been made for next 40 years. Varying assumptions about the possible changes in national birth rate and a single assumption about decline in death rate have been made. The component method of population projections has been utilized to project the age and sex wise distributions of population by the end points of the Five-Year Plans for the entire period beginning in 1961 to 2001. Implication of population growth also has been worked out in terms of crucial age categories of population.

## 1980's.

177. PEEP INTO problems of eighties. II, 1980 April 24; 6:1.

Population growth will be the greatest of the many formidable challenges of the eighties according to Mr. Jagmohan, Governor of Delhi. Rising population creates problems such as food, distribution of population, housing, transport, natural resources, technology. All these challenges would subject the nation's social, economic, political and cultural institutions to considerable stresses and strains.

## 1990.

178. INDIA'S POPULATION - 1000 m likely by 1990. II, 1971 January 8; 6 : 7-8.

According to the conclusion reached by the population reference bureau the population of India will reach 1000 million by 1990 or 1995. The present birth rate is between 42 and 45 per 1,000. India's demographic future was described as "bleak" by the study. Study said that India's population could reach the staggering level of

1,500 million at the end of the century if mortality rates continued their moderate downward trends.

2000 AD.

179. MORAES (Dom). 1,000 million Indians in 2000 AD. III ~~II~~ ngly; 95, 25; 1974 August 18; 17-19.

Dom Moraes expresses the opinion that, unless a redistribution of resources is made, it will be difficult for man to survive. Food, education, employment, shelter are the basic rights of every man. These are the rights which are likely to be denied to most men, even more than they are now, if the present situation of population explosion continues.

2045 AD.

180. TEN BILLION Indians. II; 1972 May 27; 4:2.

Every thing connected with reproduction is so intensely personal that it is difficult for most people to take a global view of the current population explosion. The articulate world has already split into two camps, both taking extreme

views : the one stands for sternly controlling this biological phenomenon, the other for absolute non-interference and total personal freedom of choice. If fertility begins to decline, immediately, even to the replacement level, India's population will not stop growing until 2045 when it will have reached 1.2 billion. If, the present birth rates continue unchecked, there will be 9.3 billion of us in 73 years. Whatever miracles on the food and housing fronts we may achieve, famine and large scale human distress are inevitable.

#### POPULATION, GROWTH influenced by ENVIRONMENT.

181. BOSE (Ashish). Environment and population : Some ecological and demographic implications for development planning in Asia. In Population strategy in Asia; 1974; P 363.

The relationship between population growth and the degradation of human environment is a controversial subject. In countries like India, the modern manufacturing sector in urban areas is so small that it is incapable of absorbing millions of under employed persons from the rural areas who are dependent on subsistence agriculture. Despite the

substantial increase in industrial out put, India is faced with the problem of structural stagnation, and the prospect of significant transfer of population from the agricultural to the non - agricultural sector is far from bright. Migration from rural to urban areas continues, bringing about a demographic expansion of the big cities without a matching economic expansion or development of the urban infra structure.

POPULATION, GROWTH influenced by INDUSTRIALIZATION, URBANIZATION.

182. BOSE (Ashish). Population growth and the industrialization - Urbanization process in India. Man in India; 41, 4; 1961; 255 - 75.

Gives a demographic picture of the progress of urbanization in India during the last six decades (1901 - 1961) and high lights the role of population growth in the industrialization - urbanization process.

POPULATION, GROWTH influenced by MARRIAGE AGE.

183. BASAVARAJAPPA (KG) and BELVALGIDED (MI). Changes in age at marriage of females and their effect on birth rate in India. Eugenics Quarterly; 14,1; 1967; 14-26.

Study based on certain assumptions that if from 1961, a specified point of time no female marries under 20 years of age and also that increased proportion do so between 20 to 39 years. These females were projected into various marital categories using 5 years intervals by using constant schedule of mortality and marital fertility rates. By applying a set of age specific marital fertility rates to these project distributions the birth rate was obtained, changes in it were thus studied. Descriptions of these computation.

POPULATION, GROWTH influenced by POVERTY.

184. POPULATION, POVERTY and the future of India. Yojana; 20,11; 1976 July 1; 33 - 37.

Population, poverty and the future of India are closely interlinked. Since independence of India there has been a tremendous increase in the production



and yet when we work out the per capita growth we find that the result is not impressive. It has to be accepted that one of the main reasons for this is a fact that our population since independence has almost doubled. This gave rise to problems of food, housing, clothing and education etc. Therefore population and poverty are very closely inter-related.

POPULATION, GROWTH influencing FOOD, RAJASTHAN.

185. ESTIMATES OF population growth and demand for food grains in Rajasthan, 1961-71. AICE Economic Review 14, 9; 1962; 11 - 13.

A correction factor (population census figures divided by corresponding projected figures) is calculated for the State, separately for male and female populations and then applied to official projected figures for 1961.

POPULATION, GROWTH influencing WOMEN.

186. BHENDE (Asha A). Demographic changes and the status of women. J Fam Welf; 22,2; 1975 December;11-20. In this article the author has discussed demographic changes, with special reference to the status of

women, as rapid population growth, under development and the low status of women invariably appear to go together. The author has studied the impact of spatial distribution of population, mortality and fertility on women's status and found that all these factors are responsible for the low status. But planning aids in improving the status of the women by preserving her health, and fosters favourable conditions for her own advancement and her contribution to the development of her community and the progress of her country.

#### POPULATION, GROWTH, KERALA.

187. GORE (NY). Growth of population in Kerala in 1901-61. Population Review 12, 1-2; 1968; 39-47. Examines the reasons for the high growth rate, noting the position of Kerala in comparison with 4 other states as to ; intercensal growth rates, age sex structure, proportions married, mean age at marriage, sex ratio and net migration.

## MIGRATION, KUTCH.

188. ANTANI (PH). Population problem of Kutch. Journal of Gujrat Research; 19, 2/74; 1957; 103-11.

Study of the population aspects of the economy and the role of emigration. Analyses : growth of population, density, man - land ratio, emigration, sex ratio, urban rural classification, occupational structure etc.

## MAHARASHTRA.

189. MUKERJI (V). Application of some simple multi-regional growth and migration models to district levels census data in Maharashtra. Artha Vijnana; 6,3; 1964; 187-205.

A simple population growth and migration model has been applied to census data on population size of the districts in Maharashtra, to investigate the direction of non - migration from the districts. An attempt has been made to study the results thus obtained in relation to the district level information on some socio economic variable. The model has also been used to work out the district level and

compared with the district level and state level population projections for 1971 and these are compared with the district level and state level population projections for 1971 based on district - level decennial percentage increase in population during the decade 1951-61.

190. NARAYAN DAS. Population projections of greater Bombay under varying migration patterns, 1971-91.

J. Fam. Plann. 34, 1; 1977 September; 33-46.

In this article the author have attempted population projections of Greater Bombay for 1971-91 under varying migration assumptions. The age sex returns of the 1971 census, after adjustment for errors have been taken as the base population.

#### POPULATION, GROWTH, MORTALITY TRENDS

191. CHELLASWAMI (T). Mortality and fertility trends and population growth in India (1956-76). In India's population; 1959; P 69.

The population projection furnished here is mainly on the lines of classical approach usually adopted in long range population projections by the component

method and is based on four sets of alternative assumptions in regard to mortality and fertility trends. The estimates of future population are provided at five - year ; intervals in five year age groups separately for each sex.

#### POPULATION, GROWTH, 1961-81.

192. ARORA (BR). Population of India, 1961-81 : Peep into the future. AICC Economic Review 16; 1964; 27-31.

An attempt is made to arrive at a set of estimates of the population of India as at 1971 and 1981. Survivorship rates of 1951 - 61 are assumed to remain constant for the population aged and over to improve for ages - 14. Child women ratios are assumed to rise 1961 - 71 and to return to the 1961 level by 1981.

#### 1961-81 AD.

193. NATEKAR (MV) and VISARI (Pravin). Growth of population in India 1961-81 : A Comment. Economic Weekly; 16; 40; 1964; 1609.

Comments on K.C. Taneja's worked out population

projections for India (Growth of population in India; 1961-81, Economic Weekly, 16 (36-37)) by means of component method. "The assumption underlying the projections are rather mechanistic. The presents note attempts to show that his mechanistic assumptions have implications that are inconsistent with the past observation or conclusion that can be derived from theoretical methods."

1971.

194. INDIA'S POPULATION 547 m on April 1. Indian Worker; 19, 29; 1971 April 19; 12.
- India's population at sunrise on April 1, 1971 stood at 547 millions showing a growth rate of 24.57 percent in a decade. Article gives population of each state of India in millions. Over 70% of the population continues to be illiterate, though the overall literacy rate has gone up from 24.03 in 1961 to 29.35 percent now.

195. POPULATION OF India is 547 million. TI; 1971 April 12; 1 : 8.

India's population is 547 million, according to the provisional census estimate of 1971. The provisional figure of 547 million is significantly lower than expected. It had been thought that India's population would increase to 550 million and possibly to as high as 570 million.

196. SIZING UP an explosion : 1971 Census. Links; 13, 38; 1971 May 2; 18-19.

Census figure seem to indicate that the impact of the family planning programme has been deeper than anticipated. It is noted that at the all India level the rate of population growth in the decade 1961-71 was 13.6 % faster than what it was in the previous decade. A study of district wise density and population growth rate strikingly brings out the fact that the hollow basin of the thinly populated districts of Orissa, M.P. Rajasthan, and Gujrat has been filling up rapidly while the densely populated belt of the Gangetic plain, the East coastal region and the southern peninsula are showing distinctly poor growth rates.

## POPULATION, GROWTH, POLICY.

197. CHANDRASEKHARAN (C). Population policy in India. In India's population; 1959; P 143.

In this paper family planning programmes in Five Year Plans are discussed. In conclusion, it is felt that the programmes outlined in the first and second five year plans are basically sound and should be given further impetus in the Third Plan. Special attention should be given to consideration of priorities and the selection of areas where intensified programmes should be concentrated. Methods should be developed for getting larger numbers of non medical persons associated with these programmes.

198. HALLEN (GC). Population explosion: Need for evolving a Scientific population policy for India. AICC econ Rev; 18, 20; 1967 May 1; 23-28.

Today population explosion is a growing peril more appalling than even an H-bomb explosion. Systematic and scientific effort has so far been lacking in evolving a proper population policy in India. It is time that all such factors - social, economic, demographic, religious, etc., be taken into full consideration and a really workable policy of



population worked out which will be directed towards the maintenance of population size at a fairly constant level in preference to either rapid increase or decrease.

199. POPULATION POLICY. Statesman 1978 January 31; 8:2.

In an interview with a Delhi weekly, President Sanjiva Reddy has made several observations about family planning. He is in favour of legislation to ensure wider adoption of birth control practice. He indicated the kind of legislation by mentioning "some sort of penalties or disincentives for having more than two or three children." He spoke against forcing an individual to undergo sterilization.

#### PROBLEMS.

200. ATTAR CHAND. Population growth : Challenge before youth. YIN; 1971 September 23; 17-18.

The population growth creates powerful internal pressures with in the poor countries, like India, and these are the countries which can least afford them. The scope and significance that centres

around population is so great that our youth organizations must consider it seriously and determine what role they can play in dealing with this problem.

201. BHARGAVA (Urmila). Population problems and policy. Mainstream; 1970 August 8; 25-28.

Among the most important problems now confronting India is the problem of population. Inspite of continuous efforts in all the plans, India can just afford to feed two men in every three of the population. The fault lies not only in the slow increase in agricultural production but also in rapidly increasing population. We must reduce the imbalance between abundant labour force and scarece capital. India is perhaps the first country to take the problem of population at Government level.

202. BROWN (LR). Twenty two dimensions of the population problem. In Population reports Family Planning Programmes; 1976; J 178-204.

Various facts of the problem of population growth are discussed from Social, political, economic and ecological point of view.

203. CHAGLA (MC). Population crisis in India. In Population crisis and the use of world resources; 1964; P 151.

This gives the reasons for high population growth, its impact on economic condition of India, and the problems created by rapid population increase. It is said that the proper and human remedies for over population are not birth control but increase in food production and industrialization.

204. CHANDRASEKHAR (S). How India is tackling her population problem? AIRC economic Rev (Republic day); 20, 13-14; 1969 January 26; 51-57.

The article gives the reasons and consequences of excessive population growth. Population increases rapidly, but the increase in the production of food and other necessities does not keep pace. To control population problem, population policies are to be made, effective within the frame work of our open society with centuries old customs and traditions.

205. CHANDRASEKHAR (S). India's population problem - Quality of population needs improvement. Commerce; 1966 July 30; 202.

A population figure in itself does not mean very much. If India had the necessary resources and

technology skills, she could possibly transform the present liability of such massive human numbers into a positive asset. But, unfortunately, our natural resources, capital, scientific, and technological know how are severely limited in relation to what is needed to raise our very low level of living. Agricultural production can be increased up to a point. Land and other natural resources do not increase with the growth of population. The central problem of India's economy is simply poverty or the low standard of living of a great majority of the people. Slower the rate of population growth, along with steadily improving agricultural and industrial production, India's standard of living is bound to rise.

206. CHANDRASEKHAR (S). Population : Problems and prospects. Eastern Econ (Annual Number); 1970; 1209 - 1210.

In this article major causes of population explosion are given. Today's population policy cannot yield full results at once but it is encouraging to note that a perceptible beginning of the decline in the birth rate is already visible in certain areas.

207. CHANDRASEKHAR (S). Population dilemma. H; 1978  
September 4; 32 e-h.

In the world today, India ranks second in the population numbers. India's population problem is one of poverty, no matter how this term is defined or qualified. According to numerous official and non official estimates, in terms of per capita consumption of such commodities and services as food, clothing, housing, education, health and culture and recreation India's level is among the worlds' lowest.

208. CHANDRASEKHAR (S). Population explosion : India's first and foremost problem. Capital (Suppl); 163, 4144; 1970 December 31; 19 - 23.

Of all the problems that India faces today, perhaps the most important one is that of population control. The problem of India's population growth is the most important one, for on its solution depends to a larger extent the solution of the problems of food supply, housing, educational and medical facilities. India's most urgent problem today is to reduce her birth rate as expeditiously as possible.

209. CHATTOPADHYAYA (Kamla Devi). Population problem : Policy and planning. ET 1970 September 14; 8:1. 1974 is designated as world population year by Economic and Social Council. India's population council deals with all aspects of population, not merely in terms of numbers but also its distribution over space, and its changing structure which occur almost unceasingly. For establishing a national balance, the question of regulating population growth is bound to come up. Too big a dependent population eats into resources which otherwise is available for progressive national build up. Progress is hampered if population and production do not balance.

210. FRANDA (Marcus F). India in crisis. Current 173; 1975 May-June; 36-49.

Among the countries of the world, India offers an extreme example of the imbalance of population, resources and technology. What sets India apart from other nations is its increasingly unfavourable population - resources balance, which will become more severe as food supplies throughout the world become tighter. In this sense, India's basic economic problem is rather simple-i.e., food

production must either be increased at a much faster rate than the doubling that has occurred in the last two decades, or the population growth rate must be severely reduced and quickly.

211. GOPALASWAMI (RA). Millstone round the neck.

Svarajya; 1971 July 31; 3-5.

This article deals with the causes of rapid increase in population and its consequences and problems. Article deals with the economic consequences of the population growth and comes to the conclusion that excessive child bearing has proved to be the millstone round the neck of the national economy.

212. GOVIND NARAIN. Population problem : International perspective. Assam Inform ; 19.9; 1968 December; 30 - 33.

From the national view point, growing population is the most crucial problem facing our country. Studies conducted at various centres in our country show that the family planning programme has begun to make an impact on the demographic curve and the birth rate is tending to fall. We faced the problem not only of national resources and population but also of world resources and world

population. This is revealed by dependence of one country over the other as reflected by inter country projects and bilateral agreements.

213. KUTHIALA (Sudarshan). World population dilemma with special reference to India. United Asia; 18, 2; 1966 March - April; 53 - 61.

This article deals with the causes and consequences of rapid population growth and suggests steps towards the alliviation of population growth in India. Suggestion is the application of scientific method to the production of food grains and other essential commodities.

214. MAHAJAN (EM). Population problem reconsidered in 7 parts. Economic Affairs; 10; 1965; 73-82.

The question whether India with death rate that western people had half a century ago, the standard of living the west has under the industrial revolution and the birth of western middle ages, could do substantially better in her economic development, if the rhythem of her population growth were reduced, the demonstrative analysis attempted in this paper unambiguously indicates that the answer is in the affirmative.



215. PADGAONKAR (Dileep). Scenarios of the future :  
Dangers and challenges ahead. TI, 1974 November 4;  
4:3-5.

It points out how the world's population, particularly China and India, have been growing much faster than its food supplier, how natural resources are rapidly getting depleted and how the environment is being damaged beyond repair.

216. PERILS OF unchecked population growth. Population Rev; 21, 1-2; 1977 January-December; 165-67.

The population explosion is a challenging, disturbing, basic biological problem which has become a threat to mankind's prosperity, peace and even survival. Mere numbers need not be a problem so long as the available resources in land and minerals, technological know how and capital can assure the population a desirable optimum standard of living in terms of the minimum requisites of food, clothing, housing, education, public health and leisure. Agricultural productions should be increased for the growing population. Not only agricultural productions but purchasing power of the people should also be raised.

**217. PRESSURES OF life. II; 1973 October 17; 4:2.**

Every where the quality of life is getting poorer while the numbers grow. In the villages privation and despair; in the cities tensions and agitation. All this is attributable in a large measure to the pressure of population. Directly involved is food shortage. Much may be said about drought and floods; but the statistics remains that the per capita consumption of basic items of food has gone down. In urban areas there are the added problems of inadequate shelter, poor sanitation, insufficient health services and a grave shortage of water. Quality ebbs away from life while pressures mount.

**218. PROBLEM OF man is man : It is global, and cries for solution. Yojana 18,12; 1974 July 15; 3-7.**

Article deals with the rapid growth of population in India and the problems created by it. India's population problem, like that of most developing countries, is caught in a vicious circle of poverty, prejudice and insufficient motivation, and solution for it is by no means simple.

219. RAO (VKRV). Problem of India's increasing numbers : Plea for inter state approach. AICC Economic Review 13,5; 1961; 10-12.

Comparison of census data of 1901 and 1961 for fourteen states of India on population size percent increase, and density per square mile, the discussion of the policy implications of the differences observed.

220. SARKAR (SS). Population problems (Bijay Chandra memorial lectures 1967). Man in India; 49, 4; 1969 October-December.

This isn't any population problem; We have not exploited our natural resources and food problem is because we have not tried enough to increase food production by improved methods of agriculture. Birth control and more food production are the solutions for the problem.

221. SINHA (JC). Population problem in India. Modern Review; 94, 5; 1953; 361-64.

Discusses different aspects of the population problem and concludes that since we are over populated we have to resort to active family planning, increased productivity both of industries and agriculture.

222. SOM (Rajan Kumar). Population trends and problems in India. In India's population; 1959; P 59.

A study of trends in population is made. Reasons for rapid population growth and the problems created by it are given.

223. SUNDARAM (S). Burden of India's numbers. Imprint; 10,5 ; 1970 August; 9-10.

There is a population explosion in India. There has been a little industrialization and improvement in agriculture, but there has been a rapid growth in population. So, our total resources are cut up among many more millions, thus reducing our productive dividends. People in India do not have protein rich diet. Apart from making people mentally and physically weak, protein deficiency accelerates female fertility.

224. WANKAR (Kusum). Population problem. Janata; 24, 11; 1969 April 6; 9-10.

The advances in technology and science have threatened the existence of man to a certain extent. Scientific advances have reduced the death rate to such an extent that a crisis has resulted. India is facing migration into her

territory, which is addition to the population growth. Author has given many suggestions to check the population growth.

225. WIDENING GAP. TI; 1973 June 6; 6 : 1.

The latest, 1973, United Nations Demographic Year Book paints a pretty depressing picture at least, as far as the developing countries are concerned. In India, the government has been at pains to emphasise that abortion isn't meant to be part of the birth control programme although it has some effect on the birth rate. While the rich nations in the world have got the population problem under control and are racing ahead towards the ideal ZPG, the poorer ones are stemming their own juice.

#### POPULATION, GROWTH, PROBLEMS and POLICY.

226. CHANDRASEKHAR (S). India's population : Facts, problems and policy. Demographia; 16, 3-4; 1973; 324 - 35.

Demographic revolution is most intense in India. This results from a high birth rate, low aged at marriage, marital institutions and practices, political stability, modern public health measures and other factors. India's development is hindered by this rapid population growth. The government has attempted to develop an antinatalistic policy

to cope with this problem.

227. PADMANABHAN (BS). Planning and population. *ibid*; 1978 August 9; 8 d-g.

The Janata Government has attached considerable significance to the change in nomenclature, from family planning to family welfare, and claimed that it signifies the new concept of achieving the desired goals of population control through a package of schemes for the total welfare of the family. It has also been stressed that an appropriate population policy should form part of the basic development strategy. Population growth being a pervasive phenomenon, effective all aspects of development, the study team wants that programmes of different ministries should take into account the population implications.

228. SMITH (TE). Population growth and population policies. Indian and foreign Rev; 6, 20; 1969 August 1; 17-19.

The article gives in detail the factors responsible for rapid increase in population and suggests there should be a national population policies aimed to reducing the rate of growth of population.

## CONTROL.

229. GARG (RBE). Population : Warning bells toll.  
National Herald; 1980 September 2; 5 : 2-5.  
 India's population ranks next only to China.  
 It is a well-known fact that the national  
 campaign to arrest population pressure has lost  
 much of its momentum. Though India has made  
 remarkable progress in agricultural production  
 during the past decade, its birth rate appears  
 to be exceeding its ability to produce sufficient  
 food, and negating all the gains it has so far  
 achieved. India cannot any longer afford this  
 except at the cost of mounting misery, hunger  
 and malnutrition. It is necessary to arrest the  
 trend of population growth.

POPULATION, GROWTH, PROBLEMS, CONTROL, FAMILY  
 PLANNING and ECONOMIC DEVELOPMENT.

230. NARAYANA (IL). Economics of population explosion :  
 Need for a revolutionary programme of family  
 planning imperative. Commerce; 113, 2893; 1966  
 October 15; 674-76.  
 High growth rate of population, which is the  
 result of the lag between high and stable birth

rate and rapidly falling death rate in under developed countries, like India, is generating population explosion. Unless economic development runs on two legs, economic planning and family planning, it will not be possible to raise the levels of living and arrest the danger of famine and food scarcity. The sooner the population is stabilised through family planning programme the greater will be the increase in economic welfare.

#### POPULATION, GROWTH, PROBLEMS, LAND.

231. HUTCHINSON (Joseph). Land and human population.

Sci and Cult; 32, 12; 1966 December; 563-75.

Over population means too many people for the resources in land that are available to them. At this point of time, the population density has reached the critical level, and the choices before the community lie between the over exploitation of resources to the long term detriment of the system, the planning of new systems of resource use that are both more conservative of resources and more productive of real income, and population control. Article



gives brief history of population growth in different centuries. Our greatest need is to master the threat of our own numbers. We may reasonably hope that our resources in land will be sufficient, if wisely managed, to meet the needs of our expanding population.

#### POVERTY.

232. DASARDA (HM). Is poverty caused by population growth? Mainstream; 15, 12 ; 1976 November 20; 12-14.

There is no such thing as over population in an absolute sense, that is independent of direction of the speed of development of the economic resources of its population in question. Land, water, mineral and metals are necessary for rapid industrial growth. It is misleading to argue that at lower density and slower birth rates development would have been much more repaid, besides it has been powerfully demonstrated that the rapid rate of growth of population has been the prime source of development. Alleged over population is not the cause but the consequences

of poverty. Over population is the result of low productive capacity. Only way to solve the problem of poverty is to change the exploitative, socio economic structure which acts as fetters on productive forces.

233. KAR (Monoranjan). Farm prospects. ET; 1972 October 31; 20 : 1.

The problems of poverty and population growth attract serious investigation on the part of researchers in order to find a level of co-relation between them. The current assumption that the rate of population growth affects the growth rate of economy does not seem to stand closer scrutiny in case of west Bengal, if one considers these aspects on a time scale of last three censuses starting from 1951. Rate of population growth in west Bengal had been slower in past two decades, the increase in the absolute number can only be explained by influx from outside the state.

234. MAITRA (Priyotosh). Population, poverty and pollution. Mainstream; 13,17; 1974 December 28;11-14. Population growth is generally taken as cause of

poverty on one hand and cause of problems of pollution and resource scarcity on the other, but such is not the case. Patterns and purposes of production and consumption are responsible for growing problems of poverty, on the one hand, and pollution on the other, and for that matter human being and not the number of the population, is responsible. In the existing production pattern, which is alienated from man nature and which is fed by a craze for material goods, any decline in population would, instead of solving the problem of pollution, aggravate it.

235. POPULATION, POVERTY and pollution. Population Rev; 21, 1-2; 1977 January-December; 131-33.

This is a summary of the Three Rampure Endowment lectures delivered by Dr. S. Chandrasekhar.

India like many countries, faces in varying degrees problems of polluted air and contaminated water, erosion of top soil, depletion of natural resources dwindling wild life, urban sprawl and city slums. Of all the kinds of pollution, poverty low levels of living and consumption is the most insidious, and this pollutes not only the

environment but corrodes the soil. One of the causes of poverty is growing population.

236. POPULATION : Problem, not alibi. Thought; 24,52; 1972 December 23; 5-6.

In an interview 41 % disapproved of birth control methods to limit the family size. The disapproval was high among couples belonging to lower socio economic strata. Mr. J.R.D. Tata did well to draw attention, at the international seminar of economic journalists, to the importance of the political leadership recognizing that population growth is the prime reason for our failure to make a real dent in the poverty of the masses over the quarter century since independence. Mrs. Gandhi has said rightly 'production and national wealth must grow much faster than population.'

237. RAO (VKRV). Population and poverty. Commerce; 139, 3574; 1979 December 15; 1144.

Vast increase in India's population has played a crucial role both in the growth of Indian poverty and its threatened continuance over the coming years. Article gives growth of population in

different years from 1921 and its effect on economic development of India.

238. THIAGARAJAN (K). Over population means continuing poverty. Soc Welfare; 23, 8; 1976 November; 32. The author emphasises that the root cause of poverty is over population. The persistence of a high level of birth rate in the rural areas is a growing indication of the spread of poverty. Over population can be checked to certain point by introduction of population values in the educational curriculum, by raising the age of marriage.

#### RESOURCES.

239. SETHNA (Homi N). Population and resources. J of fam welf; 13, 1; 1966; 23-28. Article high-lights need for population control in view of the fact that otherwise resources will be insufficient to cope with the population.

## SOCIOLOGICAL.

240. BALASUBRAMANIAN (NS). Sociological aspects of high birth rate in India. AICC Economic Review; 17, 19; 1966; 15-18.

Basic reason for the high rate of population growth in India is not only the consequence of drastic and sudden decline in death rate during the last decade but also due to the sociological background of people, Indian cultural conditions are favourable to growth of population author opines.

## Symposia.

241. CHANDRASEKHAR (S). Population problems of India. Family Planning News; 10, 2; 1969; 2-5.

The text of this paper was read at the symposium held at January 6, 1969 in the statistics section of the Indian Science Congress at III power, Bombay. It deals with the problems of registration of births and deaths in the country. The contents of the paper have been divided under various heads such as Basic demography, Fertility Hostality, Foetal loss,

Internal migration, Urbanization and Family formation. Population problems in reference to social and economic needs of people have been discussed and distribution of population has been highlighted. In the end, social scientists have been appealed to conduct more and more studies on country's population problems.

#### POPULATION, GROWTH, PUNJAB.

242. TRENDS IN population dynamics of the Punjab. AICC Economic Review 18, 18; 1967; 13-17.

Attempts to study (1) broad trends in the growth of population of the Punjab during the last sixty years, (2) Changes in urbanization, (3) changes due to immigration and immigration during the last decade in Punjab.

#### RURAL.

243. TAYLOR (Carl E). Population trends in an Indian village. SAM 223, 1; 1970 July; 106-14.

Author has taken villages of Punjab for the study of population trends. More than two thirds of the world's people live in rural villages. It is in the villages that the population problem is most

acute; it is there that the massive propulation increase are bound to occur during the transition from the traditional balance of high birth rates and high death rates to much lower balance associated with economic development. Rural population problems can be solved by concentrating on the villages and by encouraging and utilizing fundamental changes inliving patterns.

TAMILNADU, MADRAS.

244. CHANDRASEKHAR (S). Growth of population in Madras city. Pop Rev; 8, 1; 1964; 3-45.

This study is devoted to a detailed examination of the formal demography of the city, the size, composition, fertility, mortality, marriage and migration, projections and the future growth of population and the numerous related problems. It also outlines a policy for the planned development of the city.



## TRENDS.

245. NANDA (AK). Population trends in India. II;  
1971 December 5; 8 : 6-7.

The 1971 census has confirmed the earlier suspicion of some people that the number of females per thousand males is now generally on the downward trend. If the sex ratio declines then the first possibility is that the number of reproductive women will be low. The incidence of reproductive wastage is likely to go up, though the extent of such increase cannot be uniform for all the population. This together with other forces operating to reduce reproduction will bring the population to a dangerously low base. The growth of population, both natural and due to migration, has been widely uneven among the states and Union territories. The addition to India's population during the last decade has been of the order of 108 millions, the decennial growth rate being 24.57 % during 1961-71 as against the growth rate of 21.54 % during 1951-61.

246. POTTI (S.J.). Study of the Indian population growth. Indian population Bulletin; 1, 1; 1960; 82-128. Presents analyses of data on trends in numbers, migration, mortality and fertility, differential fertility and mortality, urbanisation, occupational composition, demographic effort of social and economic trends, future trends in fertility.

247. TAEUBER (Irene B). Future population trends and prospects. Gandhi Marg; 16,4; 1972 October; 298 - 307.

Population growth and hence the problems involved in the projection of future growth are complex at given times and variable over time. Declining mortality is an achievement of modernization; health activities designed to attain still lower levels are continuing. Increasing numbers of countries recognize the hazards to national development and family welfare inherent in the continuation of declining death rates together with unchanging birth rates. India was the pioneer in placing family planning in the context of developmental planning. Increasing rates of economic growth and slowing rates of population growth are both essential to rising levels of living.

POPULATION, GROWTH, TRENDS in LABOUR FORCE.

248. CHELLASWAMI (T). Population trend and labour force in India : 1951-66. Pop Rev; 2,2 ; 1958; 42-48.

The main object of this paper is to provide estimates of the future labour force in five year intervals upto the year 1966 by the component method. Before applying the labour force participation rates to different sex and age groups, the projected population has been distributed on certain simple assumptions by rural and urban sectors for both the sexes in different age groups.

## POPULATION, GROWTH, TRIBALS.

249. KUTHIALA (SK). Demographic characteristics of tribal population in India. Indian Sociological Bulletin; 7, 1; 1969 October; 57-58.

According to the 1961 census, the tribals of India number over 29 million of the total population of India. An attempt is made to discuss from scanty statistical material the general demographic

characteristics of tribal populations in India. The growth of scheduled tribes from 1881 - 1941 and from 1941 - 61 is analyzed. Among the general traits which emerge are : a high level of fertility and low survival rates, i.e, a high mortality rate, a phenomenal absence of aged people versus a very high per cent of children 0-4 years of age compared with the general population.

ZPG.

250. KIEFER (David M). On the road to ZPG. Chemical and Engineering news; 49, 50; 1971 December; 20 - 22.

A declining population growth rate may well be beneficial to most industries. In the future, business will have fewer customers but per capita spending will increase; labour will be scarcer but productivity will soar. Based on current figures, however, the median age is expected to rise from 28-37 years and each age bracket of the labour force would have approximately the same number of workers, thereby limiting advancement opportunities. The developing funds towards ZPG is graphed.

## **PART III**

AUTHOR INDEX

AGARWALA (SN)	..	106, 116, 171
AIYER (Krishna S)	..	36
ALEYAMM (George)	..	157
AMONKER (RG)	..	4
ANJANI (PH)	..	188
ARORA (BR)	..	192
ATTARCHAND	..	200
AZAD (Amar Singh)	..	137
BACK (Kurt W)	..	158
BAJPAI (RG)	..	5
BALASUBRAMANIAN (NS)	..	2, 19, 240
BALJIT SINGH	..	138
BANERJEE (Shallendra Nath)		85
BANERJEE (Swapan K)	..	126
BANSAL (PC)	..	172
BANWARI LAL	..	6
BARNABAS (AP)	..	107
BASAVARAJAPPA (KG)	..	183
BECKMAN (M)	..	87
BELVALGIDED (MI)	..	183
BHARADWAJ (NC)	..	114
BHARGAVA (Urmila)	..	201
BHATIA (Dipale)	..	116

BHATIA (JC)	..	152
BHATTACHARYA (D)	..	118
BHAVE (Vinoba)	..	98
BHENDE (Asha)	..	186
BOSE (Ashish)	..	127, 181, 182
BOSERUP (Mogens)	..	79
BROWN (LR)	..	202
BURKI (Shahid Javed)	..	20
CALLAMAN	..	84
CASSEN (Robert)	..	37
CHADHA (VK)	..	128
CHAGLA (MC)	..	203
CHANDRASEKHARAN (S)	..	197, 130, 139
CHANDRASEKHAR (S)	..	117, 129, 167, 203, 205, 206, 207, 208, 226, 241, 244
CHATTOPADHYA (Kamla Devi)		209
CHELLASWAMI (T)	..	90, 191, 248
CHOSNALKAR (Melana)	..	124
CIRVANTE (Suresh R)	..	89
CLARK (Cln)	..	36, 39
DAM (Andreven)	..	103
DAR (Usha)	..	91
DAS (Anil K)	..	126

DASARDA (HM)	..	232
DASGUPTA (Prithwis)	..	162
DATTAR (BR)	..	80
DEVENPORT (H)	..	81
DEORAS (PJ)	..	100
DIXIT (Dhirendra Kumar)	..	121
D'SOUZA (Anthony A)	..	131
DUTTA (Jatindra Mohan)	..	3
ENKE (S)	..	165
ETINNE (Gilbert)	..	1
FLORIR (George A)	..	40
FRANDA (Marcus F)	..	210
GANGULI (BN)	..	41, 42
GARG (Pyara Lal)	..	137
GARG (REL)	..	229
GHOSH (SN)	..	8
GINDERTREL (Jean-Michel Van)		22, 99
GNANASEKARAN (KS)	..	96
GOPALASWAMI (RA)	..	211
GORE (NY)	..	187
GOSAL (GS)	..	125
GOVIND NARAIN	..	212
GROVER (SR)	..	161



GUPTA (Partha Sarathi)	..	43
HALLEN (GC)	..	198
HERZOG (John)	..	109
HOONER (Edgar M)	..	45
HOOVER (EM)	..	44
HUSAIN (IZ)	..	46
HUTCHINSON (Joseph)	..	231
JAIN (SN)	..	173
KAMERSCHEN (David R)	..	168, 154
KAR (Manoranjan)	..	233
KELLEY (AC)	..	48
KESHWANI (GH)	..	11
KHANDEWALE (SV)	..	122
KIEFER (David M)	..	250
KLEINMAN (David S)	..	169
KOHLI (KL)	..	23
KRISHNAMURTI (K)	..	49
KULKARNI (VB)	..	78
KUMAR (P)	..	24
KUTHIALA (SK)	..	213, 249
KUZNETS (Simon)	..	50
LAL (RB)	..	94
LEE (Luke T)	..	93
LEIBENSTEIN (Harvey)	..	51
LORIMER (Frank)	..	52

MAHAJAN (BM)	..	214
MAHALANOBIS (PC)	..	118
MAITRA (Briyatosals)	..	234
MALTHAS (AM)	..	157
MAPARA (Goverdhan)	..	113
MAJALLIN (W Parker)	..	174
MEHER (MR)	..	26
MEHTA (Asoka)	..	53
MEHTA (BC)	..	104
MEHTA (Fredie A)	..	54
MEHTA (JK)	..	148
MIRDHA (Nathuram)	..	142
MISRA (RC)	..	143
MOHAN (Rajpal)	..	136
MOHHANTY (PC)	..	144
MOHILE (BV)	..	153
MORAES (Dom)	..	179
MUKHERJEE (Sujit K)	..	55
MUKERJI (V)	..	189
NANDA (AK)	..	245
NANDA KUMAR (Prema)	..	12
NARAYANA (DL)	..	56, 149, 230
NARAYAN DAS	..	190
NARENDRA SINGH	..	25
NATEKAR (MV)	..	193
NEWMAN (Peter)	..	57

OGBURN (William F)	..	108
OOMMEN (MA)	..	58
PADGONKAR (Deep)	..	215
PADMANABHAN (BS)	..	227
PAKRANI (Kanti)	..	59
PANDIT (HM)	..	176
PATEL (NT)	..	60
PATHAK (GS)	..	86
PRABHUSWAMY (N)	..	28
PRAKASH (Som)	..	61
POTI (SJ)	..	246
RAJA (KCKE)	..	119
RAJKUMAR (R)	..	62, 150
RAMAKRISHNA (G)	..	110
RAMALINGASWAMY(V)	..	29
RAO (SK)	..	63
RAO (VKRV)	..	82, 219, 237
RAU (BRK)	..	64, 65
RAY (Sarkar)	..	132
REVELLE (Roger)	..	133
ROY (Tuhin K)	..	111
RUSSELL (WMS)	..	66
SAHAY (S)	..	30
SARKAR (SS)	..	220
SATHYAPRAKASAM (M)	..	67

SAXENA (JP)	..	88
SEAGRAVE (JR)	..	35
SENGUPTA (Biswatosh)	..	163
SEN (SN)	..	68
SEN (SR)	..	31
SETHI (JD)	..	69
SETHNA (Homi N)	..	239
SHAH (SL)	..	70
SHAHID YUSUF	..	20
SHARMA (PM)	..	102
SHENOY (BR)	..	71
SHOLAPURKAR (MV)	..	156
SINHA (JC)	..	147, 221
SINHA (JN)	..	32, 72, 73, 83
SINHA (RK)	..	16
SINHA (UP)	..	151
SMITH (TE)	..	228
SOM (Rajan Kumar)	..	222
SPENGLER (Joseph J)	..	74
SRINIVAS (MN)	..	134
STEPHEN (Euke)	..	75
TAEUBER (Irene)	..	18, 247
TANEJA (KC)	..	175
TALEKAR (VR)	..	120
TALE YAR KHAN (Homi JH)	..	135

TATA (Naval H)	..	92
TAYLOR (Carl E)	..	151, 243
THIAGRAJAN (K)	..	238
TILAK (VRK)	..	97
TRIPATHI (RP)	..	34
UMAPATHY (KP)	..	170
VISARI (Pravin)	..	193
WANKAR (Kusum)	..	224
ZAIDEN (George C)	..	76
ZLAUDEEN (P)	..	77
ZIND (RG)	..	165

TITLE INDEX

Abortion in India ..	136
Adverse effect of population explosion on economic development	64
Anatomy of population explosion	121
Are we too many? ..	11
Application of some simple multiregional growth and migration models to district levels census data in Maharashtra	189
Attitude of trade Unions towards population growth ..	113
Billion Indians by 2000 A.D. ..	129
Brahamcharya or Sterilization? ..	144
Burden of India's numbers ..	223
Census ..	21
Certain aspects of population growth amongst the tribes of West Bengal	126
Changes in age at marriage of females and their effect on birth rate in India ..	183
Changes in the Urban population in India ..	114
Changing role of demographic factors in the reduction of fertility in Karnataka ..	156

Contradiction between population		
increase and economic growth ..	41	
Curbing population growth ..	134	
Decline in population growth rate		
to be probed ..	160	
Demographic changes and economic		
growth in India ..	61	
Demographic changes and the status		
of women ..	186	
Demographic characteristics of tribal		
population in India ..	249	
Demographic situation in the ECAFE		
region ..	123	
Demographic transitions in Asian		
region ..	18	
Demography ..	4	
Dependency load in India ..	19	
Development and population ..	37	
Dynamic aspect of the relation		
of population to economic development	52	
Economic consequences of population		
explosion ..	56	
Economic consequences of population		
growth ..	44, 45	

Economic development and population	
growth in low income countries ..	49
Economic model of fertility ..	154
Economic planning and family	
planning ..	149
Economic progress and increase	
of population ..	67
Economic revolution of our time ..	53
Economics of population explosion	230
Economics of population growth ..	74
Effect of changes in age patterns of	
marriage on fertility rates in	
Bihar - 1961-68. ..	85
Effect of fewer births on average	
income ..	165
Employment and population growth	
in India ..	81
Employment aspects of population	
growth in India ..	79
Employment implications of population	
growth in India ..	83
Environment and population ..	181
Estimates of population growth	
and demand for food grains in	
Rajasthan ..	185



Estimation of demographic measures for India ..	162
Ethics and population limitation	84
Explosive growth of population in India ..	16
Falling death rate main factor ..	117
Family planning and poverty ..	137
Family planning has its impact on population growth ..	140
Farm prospects ..	233
Fertility variations and resource in rural India ..	169
Four misconceptions about population explosion ..	7
Future growth of Indian population	173
Future man power situation in India	97
Future population of India ..	172
Future population trends and prospects ..	247
Growing population a drag on industry ..	89
Growth of population and agricul- ture in India ..	34
Growth of population in India ..	5, 175, 193

Growth of population in India and Pakistan, 1801 - 1961 ..	118
Growth of population in India and the demographic cycle ..	127
Growth of population in Kerala 1901-61 ..	187
Growth of population in Madras City ..	244
Health and population ..	151
How India is tackling her population problem? ..	203
How population growth retards economic progress ..	42
Human nature, psychological backlog and the control of population growth	158
Human resources and economic development ..	77
If population grows unchecked success on food front will be temporary ..	32
Impact of population growth on society ..	106
Impact of population on India's economic development ..	62
Impact of population of India's economic growth ..	71

Income growth and population growth, or, the race is not always to the swift ..	87
India and world population year	6
India breeds and how? ..	116
India has more than 15% of world population ..	9
India in crisis ..	210
Indian demographic trends with a projection into next 25 years and their significance for social welfare ..	130
Indian fertility in achieving economic and social setting ..	139
India's most dangerous myth population explosion ..	10
India's population ..	226
India's population 547 on April 1	194
India's population problem ..	167, 205
India's population problem in perspective ..	131
India's population versus food production ..	26
Information service of India ..	141
Investment in social development	109

Is poverty caused by population		
growth	..	232
Land and human population	..	231
Law, human rights and population		93
Literacy levels and population		
growth	..	94
Man, diet and literacy in India	..	95
Mill stone round the neck	..	211
More people more dynamism	..	39
Mortality and fertility trends		
and population growth in India	..	191
Myth of population explosion	..	17
National population explosion	..	176
Note on sex pre-determination and		
population growth	..	35
Nutrition and population explosion		170
On the road to ZPG	..	250
Over-population means continuing		
poverty	..	238
Paediatrics nutrition and population		
growth	..	29
Peep into problems of eighties	..	176
Perils of unchecked population		
growth	..	216
Planning and population	..	227
Polygyny and the rate of population		
growth	..	124

Population	..	20, 159, 206, 229, 236
Population and agricultural development	..	31
Population and development plans	..	59
Population and economic growth	..	47
Population and employment in India		80
Population and food supply in India		33
Population and inflation	..	66
Population and nutrition	..	99
Population and nutrition in the year 2000	..	22
Population and pollution	..	100
Population and poverty	..	78, 101, 237
Population and prosperity rise and fall together	..	40
Population and resources	..	239
Population behaviour and its control with particular reference to India		132
Population bomb	..	13
Population change and employment policy	..	122
Population crisis in India	..	203
Population dilemma	..	207

Population dynamics in Asia ..	174
Population education in schools and colleges ..	2
Population explosion ..	8, 12, 115, 128, 135, 145, 198, 208
Population explosion and national integration ..	98
Population explosion and public policy ..	104
Population explosion in India ..	58
Population factors and economic development in India ..	70
Population growth ..	200
Population growth and balance in economic development ..	72
Population growth and capital formation ..	43
Population growth and density ..	161
Population growth and economic develop- ment ..	36, 46, 51, 63, 76
Population growth and economic development in India ..	55
Population and economic growth ..	38

Population growth and food availability		
in India ..		24
Population growth and food supply		27
Population growth and human		
development ..		86
Population growth and its relation		
to employment in India ..		82
Population growth and manpower in		
the states of India ..		96
Population growth and population		
policies ..		228
Population growth and social change		107
Population growth and the industrialization - Urbanization process in		
India ..		182
Population growth in India ..		119
Population growth, the dependency		
rate, and the pace of economic		
development ..		48
Population increase ..		14
Population increase and agricultural		
production ..		142
Population of India ..		195
Population of India in 1360 AD ..		3
Population of India 1961-81 ..		192
Population policy ..		199

Population policy in India ..	197
Population, poverty and pollution	234, 235
Population, poverty and future of India ..	184
Population pressures and economic development in India ..	23
Population pressure and economic growth ..	57, 75
Population, private ownership, Technology and standard of living ..	108
Population problem ..	92, 120, 209, 220, 212
Population problem and policy ..	201
Population problem in India ..	147, 221
Population problem of India ..	241
Population problem of Kutch ..	188
Population problem reconsidered in 7 parts ..	214
Population projections of Greater Bombay under varying migration patterns, 1979-91 ..	190
Population projection of India ..	163
Population, time lag and depreciation	148
Population trend and labour force in India 1951-66 ..	90, 248



Population trends and modern	
economic growth towards a ..	
historical prospective ..	50
Population trends and problems in	
India ..	222
Population trends in an Indian	
village ..	243
Population trends in India ..	245
Population versus prosperity ..	103
Power politics and population ..	102
Practitioners of Indigenous medicines	
and India's family planning programme	154
Problem of India's increasing number	219
Problem of men is men ..	218
Problem of people ..	133
Problem of population explosion ..	15
Problem of population explosion and	
traditional religion ..	105
Problems of prospects of family	
planning programme background ..	166
Race between population and food	
production ..	30
Region and country situation ..	146
Regional aspects of population growth	
in India 1951-61 ..	125
Regional imbalances in populations	
and income ..	88

Rising population and economy ..	60
Scenarios of the future : dangers and challenges ahead ..	215
Significance of some population theories as applied in India ..	69
Sliding up an explosion ..	96
Socio economic deterrents of fertility patterns ..	168
Sociological aspects of high birth rate in India ..	240
Soft approach no remedy ..	143
Some economic aspects of population problem in India ..	65
Some observations on labour partici- pation based on family size ..	91
Some projections of India's population	171
Study of the Indian population growth	246
Technology and growing population	111
Ten Billion Indians ..	183
1000 million Indians in 2000 AD ..	179
Too many people? ..	25
Towns : size, economic structure and growth ..	112
Trends in population dynamics of the Punjab ..	242
Trends in population, food and economic development ..	68

Twenty two dimensions of the		
population problem	..	202
Two revolutions	..	28
Widening gap	..	225
World population dilemma with special		
reference to India	..	213
World population estimate	..	164

